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STRATEGIC STUDIES QUARTERLY

FALL 2009

VOL. 3, NO. 3

Economic Security and National Security: Interaction and Synthesis

James G. Rickards

Security without the United States? Europe's Perception of NATO

Klaus Naumann, General, Bundeswehr, Retired

Shared Challenges—Joint Solutions? The United States and Europe Face New Global Security Risks—High Times for Grand Strategy

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Back From the Future: The Impact of Change on Airpower in the Decades Ahead

Mark Clodfelter

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Framing Deterrence in the Twenty-First Century

On 18–19 May 2009, the Air Force Research Institute (AFRI), the Royal United Services Institute (RUSI), and King’s College, London, cosponsored a conference entitled “Framing Deterrence in the Twenty-First Century” at the RUSI facilities in London. As the AFRI director, I was honored to join with Michael Clark, the RUSI director, and Prof. John Gearson, director, Centre for Defence Studies at King’s College, to cohost the two-day event. The changes in the international environment since the terrorist attacks on the United States in 2001, in Madrid and London in 2004 and 2005 respectively, and the emergence of new and ill-defined challenges to peace and stability in the world made the subject of deterrence of great interest to participants from Europe and the United States.

Our discussions over the two days confirmed our assumptions about the relevance and timeliness of the topic; namely, that it is vital to our collective national interests that our policy makers receive the best advice possible about this subject. Nevertheless, there are possibly more questions than answers in the field of deterrence studies. Those who expect quick, concise, and immediate practical answers from this area are destined to be frustrated by the highly conceptual tone of the products of deterrence conversations. Others may experience similar frustration as the conversation quickly turns to notions of nuclear deterrence, arms control and limitation, and counterproliferation. There are, however, several insights that can inform policy discussions.

First, deterrence may not apply to all situations. Some adversaries are probably not likely to be deterred by any practical means at the disposal of state actors—such challenges must be either contained or eradicated. Also, some situations defy deterrence because they are too dynamic or too ambiguous.

For those situations in which statecraft does apply, there are situations that can and should be shaped without resorting to the conflict inherent in deterrence interactions. This implies that states adopt comprehensive, whole-of-government approaches that are relevant to the global security environment. In such a context, states should focus and tailor their strategies according to the demands of the threat. Perhaps equally important, the

complexity of the challenges we face requires strategies based on partnering with those who share similar worldviews and goals. Their perspectives and resources may add appreciably to the collective ability to cope with challenges across the globe without requiring that any one state bear the full burdens and risks associated with deterrence strategies.

Second, for those situations where deterrence may apply, policy makers must determine the appropriate instruments that work in concert with military preparation to ensure that the object of deterrence has the capacity to receive, understand, and value the deterrent aims of the policy. Additionally, deterrence success depends on being able to assess the adversary's behavior and likely countermoves. Without such assessment measures, deterrence will remain a theoretical construct with little relation to actual conditions as they exist in the adversary's camp. Further, and this is somewhat counterintuitive, deterrence also depends on the adversary assessing your intentions and your actions to reach the same conclusions that you want reached. In other words, much must go right for deterrence to work, but in most cases the consequences of failure nevertheless justify the attempt.

Third, there may be ways to deter a wide range of adversaries. To do so, however, requires developing an understanding of these actors' motives and values. To the extent that criminals, insurgents, terrorists, and other groups that represent challenges to state and international security value political goals and outcomes, they may possess levers of vulnerability that states can hold at risk and thus can use for deterrence purposes.

Fourth, as long as states possess nuclear weapons and as long as there are states that seek to proliferate weapons of mass destruction (WMD) and delivery technologies, deterrence remains a valid strategic approach. Where states have acquired such systems, deterrence is the dominant paradigm that provides a foundation for governing interaction with competitors. This serves as a crude reminder that great-power wars are a bad idea. For those states that seek to acquire nuclear or WMD capabilities, deterrence strategies provide a robust set of theories and approaches to use to delay or prevent proliferators from developing and deploying such systems.

In addition to the observations above, the participants identified three significant areas that require new thinking and research. The assumptions behind extended deterrence must be updated for the emerging security environment. During the Cold War, the number of nuclear powers was somewhat constrained by the combination of scientific and technical challenges of producing nuclear weapons, counterproliferation efforts, formal

arms-control agreements, and the confidence that the great powers would protect their allies from attack. This last cornerstone of deterrence has always relied on the belief that the great powers would respond appropriately and credibly to aggressive moves against their partners. Should this notion of extended deterrence erode, the result could be a destabilizing arms race with the accompanying increased risk of conflict.

The potential dangers stemming from failure of extended deterrence are magnified by our lack of understanding of how deterrence applies to securing cyberspace. Our reliance on cyber capabilities and the absence of legal, ethical, and forensic frameworks makes this new domain one of the most volatile and vulnerable components of national security today. Adversaries are adept at leveraging cyber capabilities to probe and to launch attacks across the breadth and depth of our societies while states remain in a reactive posture. Developing theories and frameworks to help deter cyber adversaries could prove to be one of the most important conceptual projects of the early twenty-first century.

Finally, while the existence and roles of states as the primary actors in the international system will likely remain for the foreseeable future, other actors have also demonstrated the ability to influence the system. Policy makers will need better tools for assessing the motives, roles, and capabilities that nonstate actors possess. Some of those actors will need to be deterred using a wide range of strategies and capabilities—not using exclusively military or nuclear options. At present, however, our understanding of the scope of these tasks appears to be quite limited.

The collaboration between AFRI, RUSI, and King's College was an excellent opportunity to exchange ideas with some of the brightest strategists and thinkers in the world today. We learned that, in contrast to popular impressions in many circles that deterrence was an outdated Cold War concept, it remains a vital strategic tool for government and military leaders charged with national security. The weakness is not in the concept of deterrence; it is in our lack of studying the theory in light of the present context. As Department of Defense and Air Force leaders evaluate our strategic postures in the coming months, those who have thought seriously about deterrence, in all its aspects, should contribute their perspectives. Our strategies must be characterized by a sophisticated understanding of the best mix of options for dealing with the challenges and threats we face today and will face in the future. I look forward to seeing products and ideas from the London conference in future issues of *Strategic Studies Quarterly*.

More importantly, I look forward to seeing our national policies informed by those who have thought long and hard about how to integrate deterrence into our defense structures.



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Economic Security and National Security

Interaction and Synthesis

James G. Rickards

NATIONAL SECURITY has never been more captive to economic security than it is today. Economic security is not restricted to the usual fluctuations in gross domestic product (GDP), employment, productivity, and other metrics which have been the focus of macroeconomists for decades and still predominate in academic studies. Analysis of trends in GDP—such as the rise of China, decline or instability in Russia, and the outlook for the United States—while important, do not by themselves pose immediate challenges to US national security. Instead, in the present context, economic security refers to global capital flows and the capital and commodities markets which accommodate those flows. Through these channels currencies can be destroyed, inflation can be transmitted, reserves can be depleted, and financial institutions can be destabilized.

In the extreme, entire sections of global capital markets can be frozen and debilitated to the detriment of those who rely on them most; in particular, the United States. Central bankers, finance ministers, and treasury secretaries speak glibly about systemic risk while rarely stopping to think about what they mean by the word *system*, which is at the root of *systemic*. They have a concept of the system of money, banking, and the institutions that conduct those operations which create money and extend credit, which connects directly to macroeconomic theories expressed variously as Keynesian or Monetarist. This understanding translates into misnamed stimulus packages which are, in fact, redistributionist inflation packages to be carried out by Treasury borrowing and Federal Reserve monetization

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of the resulting debt.¹ The circularity of this superficial understanding of system and the ineffectuality of macroeconomics in a systemic crisis is thus complete.

Providing true economic security requires an analysis of the economic system through the binocular lenses of physics and engineering with an approach called *econophysics*. This approach studies the following questions: Are global capital markets a system? If yes, is it a static or dynamic system? If dynamic, is it a linear or nonlinear dynamic? If a nonlinear dynamic, what are the emergent properties of nonlinearity? Is the system scale-invariant? What are the appropriate metrics for normalizing and parameterizing the scale? Does it represent an example of self-organized criticality? What are the boundaries of systemic-phase transitions?

The studies of these and other questions are the keys to understanding expected behavior and appropriate public policy in the face of the ongoing global financial collapse. A proper understanding of global capital markets behavior is furthermore the key to understanding the vulnerabilities of the United States and other national participants. This allows for defensive and counterintelligence measures and offensive capability, where necessary—all under the heading of weaponized money.

In addition to this macro approach to geopolitical-economic strategy, there is a micro element involving particular companies, technologies, and sectors which are vulnerable to disguised control techniques intended to facilitate industrial and technological espionage, technology transfer, or the disabling of critical infrastructures.

Capital Markets as Complex Dynamic Systems— Econophysics

Over the past 50 years, financial economics has specialized in quantitative analysis of problems of asset pricing, asset allocation, and risk management. Its contributions have been voluminous, leading to the creation of derivative products and the enormous expansion of the markets in which those products are traded. Underlying these developments are two hypotheses: (1) The Efficient Market Hypothesis states that all available information is fully and rationally incorporated into market prices, which move from one level to another based on new information without reference to the past; therefore, no individual analysis can outperform the market, since all insights are effectively priced in already. (2) A Gaussian Hypothesis assumes a normal

distribution of price movements such that small fluctuations are common and extreme events are proportionately rare, with the overall degree distribution of such events falling within the familiar bell-curve shape associated with random phenomena.² These hypotheses were combined into a General Equilibrium Paradigm based upon mean reversion.

The empirical failures of the General Equilibrium Paradigm are well known. Consider the 19 October 1987 stock market crash in which the market fell 22.6 percent in one day; the December 1994 Tequila Crisis in which the Mexican peso fell 85 percent in one week; the September 1998 Russian-LTCM crisis in which capital markets almost ceased to function; the March 2000 dot-com collapse during which the NASDAQ fell 80 percent over 30 months; and the 9/11 attacks in which the New York Stock Exchange (NYSE) initially closed and then fell 14.3 percent in the week following its reopening. Of course, to this list of extreme events must now be added the financial crisis that began in July 2007. Events of this extreme magnitude should, according to the General Equilibrium Paradigm, either not happen at all (because rational buyers will seek bargains once valuations deviate beyond a certain magnitude) or happen perhaps once every 100 years (because standard deviations of this degree lie extremely close to the x -axis on the bell curve, which corresponds to a value close to zero on the y -axis, i.e., an extremely low-frequency event). The fact that all of these extreme events took place in just over 20 years is completely at odds with the predictions of stochastic methodology in a normally distributed paradigm.

Practitioners treated these observations not as fatal flaws in the General Equilibrium Paradigm but rather as anomalies to be explained away within the framework of the paradigm. Thus was born the “fat tail,” which is applied as an embellishment on the bell curve such that after approaching the x -axis (i.e., the extreme low-frequency region), the curve turns upward again to intersect data points representing a cluster of highly extreme but not so highly rare events. No explanation is given for what causes such events; it is simply a matter of fitting the curve to the data (or ignoring the data) and moving on without disturbing the paradigm.³ A better approach would have been to ask the question: If a normal distribution has a fat tail, is it really a normal distribution?⁴

Many critics, notably Nassim Taleb in his book *The Black Swan*, have made the point that analytics based on normal distributions do not accurately describe market behavior in many instances.⁵ However,

while these critics have been incisive and correct on the deficiencies of the normal distribution, they have not provided a new and analytically rigorous paradigm to replace it.⁶ It is not enough to overthrow an intellectual paradigm without offering a useful replacement. Indeed, risk managers could almost be excused for continuing to use the current deeply flawed methodology in the absence of anything with which to replace it.

A Gaussian distribution is not the only possible degree distribution. One of the most common distributions in nature—which accurately describes many phenomena—is the power law, which shows that the severity of an event is inversely proportional to its frequency with the proportionality expressed as an exponent. When graphed on a double logarithmic scale, the power law describing financial markets' risk is a straight line sloping downward from left to right; the negative exponent is the slope of the line.

This difference is not merely academic. Gaussian and power law distributions describe two *entirely different phenomena*. Power laws accurately describe a class of phenomena known as nonlinear dynamical systems which exhibit scale invariance; that is, orderly patterns are repeated at all scales. What is often taken for randomness at a given scale actually produces order (albeit chaotic, i.e., unpredictably deterministic) across scales.

The field of nonlinear dynamical systems was enriched in the 1990s by the concept of self-organized criticality.⁷ The idea is that actions propagate throughout systems in a *critical* chain reaction. In the critical state, the probability that an action will propagate is roughly balanced by the probability that the original action will dissipate. In the subcritical state, the probability of extensive effects from the initial action is low. In the supercritical state, a single minor action can lead to a catastrophic collapse. Such states have long been observed in physical systems such as nuclear chain reactions in uranium piles, where a small amount of uranium is relatively harmless (subcritical), and larger amounts can either be carefully controlled to produce desired energy (critical) or shaped to produce atomic explosions (supercritical).

The theory of financial markets existing in a critical state cannot be tested in a laboratory or particle accelerator in the same fashion as theories of atomic physics.⁸ Instead, the conclusion that financial markets are a critical system rests on two nonexperimental bases: one deductive, one inductive. The deductive basis is the ubiquity of power laws as an explanation for the behavior of a wide variety of complex systems in natural and social sciences, such as earthquakes, forest fires, sunspots, polarity,

drought, epidemiology, population dynamics, sizes of cities, wealth distribution, and so forth.⁹ This is all part of a more general movement in many natural and social sciences from nineteenth- and early twentieth-century equilibrium models to nonequilibrium models; this trend has now caught up with financial economics.

The inductive basis is the large variety of capital market behaviors, which has been empirically observed to fit well with the Nonlinear Paradigm.¹⁰ It is certainly more robust than the General Equilibrium Paradigm when it comes to explaining the extreme market movements described above. It is consistent with the fact that extreme events are not necessarily attributable to extreme causes but may arise spontaneously in the same initial conditions from routine causes. Experts who have pondered why the stock market fell almost 23 percent in a single day in 1987 have tried to retrofit various explanations, with culprits ranging from a dispute with Germany on currency values to the rise of portfolio insurance. Similarly, experts have queried why in 1998 the hedge fund LTCM lost \$4 billion in four weeks and nearly caused a systemic collapse, while in 2006 another hedge fund, Amaranth, lost \$6 billion in one week yet barely caused a ripple in financial markets. The answer in both cases is that there is no *linear* cause-and-effect relationship, and the search for differentiating proximate causes is futile. What does matter is that in all three cases, the system was in a critical state, but only in two (1987 and 1998) did initial conditions cause market losses to propagate into a full-scale panic, whereas in the other case (2006) such propagation did not occur; it died out. This is exactly the kind of unpredictable but potentially catastrophic behavior that the Nonlinear Paradigm anticipates.

In addition to these extreme events, research has shown that movements in stock prices adhere to the kind of discontinuous, scale-invariant behavior that the Nonlinear Paradigm describes.¹¹ In other words, the deep structure of financial markets is self-similar and chaotic at every scale. What is important for our purposes is to understand those emergent properties of nonlinear systems that have the most relevance for an analysis of the deep structure of financial markets. These properties include:

- Such systems are subject to sudden sharp collapses known as discontinuities.
- The severity of such collapses is inversely proportional to the frequency, (e.g., one event of size 1,000 for every 1,000 events of size

one); however, the extreme events happen with greater frequency than expected in a Gaussian distribution.

- A power law distribution allows events of all sizes with some frequency limited only by the scale of the system in which they occur.
- Events are scale-invariant; that is, large events are just bigger versions of small events and are not otherwise qualitatively different. This is important because the implication is that either small or large events may be caused by the same initial action, rather like minor or major forest fires possibly being caused by the same carelessly thrown match.
- Complexity is correlative with unpredictability.

While extreme events occur with much greater than normal frequency in nonlinear critical-state systems, these events are nevertheless limited by the scale of the system itself. If the financial system is a self-organized critical system, as both empirical evidence and deductive logic strongly suggest, the single most important question from a national security perspective is: What is the scale of the system? Simply put, the larger the scale of the system, the greater the potential collapse with correlative macroeconomic and other real-world effects.

The news on this front is daunting. There is no normalized scale similar to the Richter scale for measuring the size of markets or the size of disruptive events that occur within them; however, a few examples will make the point. According to recent estimates prepared by the McKinsey Global Institute, the ratio of world financial assets to world GDP grew from 100 percent in 1980 to 200 percent in 1993 to 316 percent in 2005. Over the same period, the absolute level of global financial assets increased from \$12 trillion to \$140 trillion and is projected to increase to \$240 trillion by 2010. The drivers of this exponential increase in scale are globalization, derivative products, and leverage.

Globalization in this context is the integration of capital markets across national boundaries. Until recently, there were specific laws and practices that had the effect of fragmenting capital markets into local or national venues with little interaction. These factors included withholding taxes, capital controls, protectionism, nonconvertible currencies, and licensing, regulatory, and other restrictions that tilted the playing field in favor of local champions and elites. All of these impediments have been removed

over the past 20 years to the point that the largest stock exchanges in the United States and Europe (the NYSE and Euronext) now operate as a single entity.

Derivative products have exhibited even faster growth than the growth in underlying financial assets. This stems from improved technology in the structuring, pricing, and trading of such instruments and the fact that the size of the derivatives market is not limited by the physical supply of any stock or commodity but may theoretically achieve *any* size, since the underlying instrument is notional rather than actual. The total notional value of all swaps increased from \$106 trillion to \$531 trillion between 2002 and 2006. The notional value of equity derivatives increased from \$2.5 trillion to \$11.9 trillion over the same period, while the notional value of credit default swaps increased from \$2.2 trillion to \$54.6 trillion.¹²

Leverage is the third element supporting the massive scaling of financial markets; margin debt of US brokerage firms has more than doubled from \$134.58 billion to \$293.2 billion from 2002 to 2007 while the amount of total assets per dollar of equity at major US brokerage firms has increased from approximately \$20 to \$26 in the same period. In addition, leveraged investors invest in other entities that use leverage to make still further investments. This type of layered leverage is impossible to unwind in a panic.

There can be no doubt that capital markets are larger and more complex than ever before. In a dynamically complex critical system, this means that the size of the maximum possible catastrophe is *exponentially* greater than ever. Recalling that systems described by a power law allow events of all sizes and that such events can occur at any time, particularly when the system is supercritical, the conclusion is inescapable that the greatest financial catastrophe in history is not only inevitable but could well be what we are experiencing today.

The more advanced risk practitioners have long recognized the shortcomings of using historical data in a normally distributed paradigm to compute risk measured in standard deviations from the norm. This is why they have added stress testing as an alternative or blended factor in their models. Such stress testing rests on historically extreme events, such as the market reaction to 9/11 or the stock market crash of 1987. However, this methodology has its flaws, since the worst outcomes in a dynamically complex critical-state system are not bounded by history but are only bounded by the scale of the system itself. Since the system is larger than ever, there is nothing in historical experience that provides a guide to the

size of the largest catastrophe that can arise today. The fact that the financial crisis which began in July 2007 has lasted longer, caused greater losses, and been more widespread, both geographically and sectorally, than most analysts predicted or can explain is a function of the vastly greater scale of the financial system which produces an exponentially greater catastrophe than has ever occurred before. This is why the past is not a guide and why the current crisis may be expected to produce results not unlike the Great Depression of 1929–41.

How could an enemy of the United States insinuate itself into financial markets to become a trusted counterparty with access to credit and transactional venues? Could such an adversary use that access to create imbalances which would branch and cascade through critical nodes in such a way as to cause panic, failure, and collapse?¹³ The ideal commercial cover for an enemy assault on financial markets would be an institution large enough to deploy massive amounts of capital and obtain large lines of credit but unregulated enough not to pose significant barriers to entry or be subject to oversight.

The hedge fund is the platform of choice for missions of this kind. Hedge funds are organized in tax-free, offshore jurisdictions such as the Cayman Islands, and are lightly regulated and highly secretive. Hedge funds are large enough customers to be given preferred access to clearing brokers and institutional trading systems and are offered generous credit terms that allow extensive leverage. The Chinese or Russian governments or al-Qaeda (with the backing of wealthy Salafists) could easily establish 10 such funds with \$100 million of capital each. The hedge funds would be geographically dispersed (e.g., Hong Kong, Geneva, Dubai, London, Zurich, New York, etc.). Using its \$100 million in capital, each fund could easily leverage using off-balance-sheet derivatives to a ratio of 100:1, which equals \$10 billion per fund or \$100 billion of trading positions in toto.

On orders from the foreign government or nonstate actor, the funds could simultaneously swarm global systems with one-sided sell orders on a popular index (such as the S&P 500 index future) or selected popular stocks (say, Google or Apple). Options or futures could be used to maximize leverage. The attack could commence in the off hours so that markets become illiquid and easily affected by the swarm attack. Using minimum financial force initially would ensure that ample reserves were available to continue if market forces attempted to equilibrate. The attack could accelerate throughout the day. The orders could be spread among

many brokers and clearing systems so that no single node would have a good handle on what was happening. Electronic execution could be used to the extent possible for the same reason; however, some human contact in the execution would be desirable to spread rumors. The stage is now set for panic.

If all the facts were known and if the market reacted in a perfectly rational way, supported by central banks willing to lend freely, equilibrium could assert itself and markets could absorb such selling. The problem is that all of the facts are not known, markets do not react rationally, and central banks suffer a lack of information. The attackers' strategy would rely on a panicked reaction which amplifies the initial attack and feeds on itself. Such catastrophes can only be averted by collective action, usually organized by central banks. Such rescues only work if there is enough of both information and time. The job of the enemy is therefore to move quickly, mask true intentions, and create as much disinformation and confusion as possible.

Why would nations with large dollar-denominated reserves and a major stake in the stability of the Western financial system, such as China or Russia, undertake such an attack? The history of warfare is full of strategic miscalculations in which parties initiated attacks seemingly against their own best interests or in situations where they were highly unlikely to gain or be victorious. Such miscalculations often stem from an overemphasis on short-term gains (such as unification of Taiwan with China or, in the case of Russia, handicapping a Western system with which it cannot hope to compete), to the exclusion of rational long-term calculus of costs and benefits. In any case, an attack on financial markets is unlikely to proceed in total isolation and is far more likely to be part of a multifaceted assault, possibly including an energy shut-off to Europe (in the case of Russia) or an invasion of Taiwan (in the case of China). Of course, in the case of al-Qaeda, the damage inflicted by an attack would be an end in itself.

Would such an attack succeed? Even massive financial resources marshaled by an enemy are not sufficient to destroy markets; this requires fuel added to the fire by panicked and unwitting investors. The panic could spread from node to node in an accelerating cascade of financial pressure exactly the way a power grid collapses when power surging from a failed section overwhelms an adjacent section causing it to fail also and so on. Strategically, the issue is not whether an attack would succeed (although it may well) but that it could succeed. We know the financial system is more

likely supercritical than critical because of past bailouts and massive scaling. We know that supercritical systems are highly susceptible to extreme events. We know that the maximum possible catastrophe is exponentially greater than anything we have experienced before because of this massive scaling. Also, the costs of the attack are minuscule. The actual investment by the enemy as described above is only \$1 billion, far less than the cost of a single naval vessel. There is even an element of plausible deniability; after a day of havoc the enemy hedge fund traders could simply disappear, leaving unwitting employees to clean up.

If the enemies fail they have a modest cost and some deniability; if they succeed they could destroy Western capital markets. This is an excellent risk-reward ratio.

Therefore, the enemy does not actually have to launch an attack to gain significant advantage. Strategically, we are back to Cold War theories of deterrence and applications of game theory. An enemy in a credible position to destroy Western capital markets need only threaten to do so to have the desired impact on policy makers.

For an enemy that cannot match the United States on land, sea, or air, the temptation to fight in the financial markets is great. Our financial markets are more vulnerable than ever, the methods for attacking them are easy and inexpensive, and the returns to the enemy in terms of the destruction of wealth and confidence are inestimable. It is imprudent to take this threat lightly or to ignore it. There will be no time to prepare once financial warfare commences.¹⁴

Techniques for Disguised Acquisition and Control

In broad terms, methods of corporate control or market manipulation potentially employed by adversaries may be grouped into direct and indirect methods. Direct methods are those used openly and in a manner typical of institutional investors but which could nevertheless have some malign purpose. Indirect methods are those where the structure of the transaction itself is designed to achieve some element of stealth or deception in furtherance of the malign intent. Direct methods of investment include, for example, the straightforward purchase or sale of financial instruments (stocks, bonds, partnership interests, etc.), whereas indirect methods may involve synthetic structures, front companies, and conduits.

Apart from enumerating the **direct methods** of investing—outright purchases of stocks and bonds—there might not appear to be much to say on this subject. But given the complexity and sophistication of modern financial engineering and investment banking, there is often far more to a share or a note than appears from the morning headlines. While conventional fixed-income and equity investments are stores of wealth (similar to money in some ways) and are traded on exchanges and governed by specialized commercial codes, they are nevertheless contracts between issuer and investor and, as such, are subject to the negotiation and customization which go into any contract. Because of the attractiveness of liquidity which an adversary might offer (especially at a time of global credit crisis) and the superior bargaining power of such adversaries, they are not always confined to fungible or standardized issues of shares of the type traded by ordinary investors on exchanges but may involve special issues (sometimes called private placements) with extensively customized terms.

Such complex negotiated terms can leave the adversary investor at a considerable advantage to the average investor in publicly traded shares. While these advantages are not commercially unreasonable, taking into account the superior liquidity and large size these adversaries offer to issuers, they can serve to entrench adversary ownership, provide material informational advantages, and limit the freedom of action of the issuer on a going forward basis. Observer status in board meetings provides all of the benefits of material nonpublic information without the burdens of director diligence and legal liability. Trainee programs likewise can be used as a privileged information channel and technology transfer program from the target company to the adversary. Such programs are not necessarily nefarious. They may simply be the price that issuers pay for ready access to the very large liquidity pools which adversaries offer in times of financial stress. However, to the extent these and other provisions can piggyback on what otherwise appears to be straightforward securities issuance, they deserve scrutiny and should be evaluated in the context of national security concerns.

The ways adversaries may seek to influence the conduct and management of sensitive target companies extend well beyond the voting rights and board seats typically examined in the national security context. While technical expertise is typically mobilized to consider the technology, intellectual property, and influence on critical infrastructure of target companies, it is not as clear that legal resources are routinely employed by the intelligence, military, and national security communities

to deconstruct governing documents and weigh the implications of options, covenants, rights, privileges, informational advantage, and other embedded features of equity, fixed-income, and hybrid issuance agreements. These issues deserve further consideration, particularly in the context of adversaries that command superior bargaining power and legal resources compared to other potential buyers of securities.

Indirect methods of investment are far more numerous, more complex, and potentially more problematic even than direct methods. They involve techniques by which an adversary can obtain either an economic interest in or voting control over a target company without direct legal ownership of the equities or bonds of that entity. These indirect methods are used daily in a variety of commercial transactions for perfectly normal reasons related to the tax, accounting, anonymity, and liability preferences of investors. As in the case of the direct methods described above, there is nothing underhanded about such techniques *prima facie*. However, since adversaries do not face many of the tax, accounting, and liability burdens faced by commercial investors, it is fair to ask why they might use these techniques other than for reasons of anonymity.

The simplest form of indirect ownership is for the adversary to buy units in a hedge fund or private equity fund which then makes investments in the name of that fund without disclosing the indirect ownership of the adversary. Normally, the interests of the adversary are undivided and shared pro rata with all of the other investors in the private fund. Also, investors in a private fund are typically passive and have no voice in the target selection of the private fund manager. However, there are several important exceptions to and variations on these basic rules which might lead to a different result. These indirect investment techniques and others can be used in combinations to multiply their effects on target companies. A conduit company sponsored by a Swiss trustee of an adversary can enter into a total return swap on a target company's stock with an investment bank acting in concert with a hedge fund which runs a managed account for the same adversary, and so forth. The permutations are endless.

Techniques for Market Manipulation

Proliferation experts are familiar with the concept of dual-use technology—specialized tools, parts, and methods which can be applied to acceptable commercial activities but which can equally be adapted to uranium enrichment, missile development, and other WMDs. It is time to

understand adversary financial capacity as a kind of dual-use technology also—something which can be applied for both investment and geopolitical aims. As with military dual-use technology, the difference can be almost impossible to discern until the technology is actually deployed.

A good example in the adversary context is the use of outside money managers. This is actually something which should be commended and included on a list of best practices because of the expertise made available to governments which may not be experienced in modern portfolio management techniques. For example, Norway's sovereign wealth fund (SWF), which is widely hailed as the model of best practice, employed 47 external managers at the end of 2007, many of whom are among the most successful and highly reputable managers in the world. On the other hand, selection of outside managers can disguise the identity of the true beneficial owner of investment funds. Use of multiple outside managers can be a way to accumulate large positions in toto without any one manager's position raising undue suspicions.

Debating whether use of outside managers is a good or bad practice is therefore a false dichotomy and a fruitless debate. The answer is that it may be good or bad depending on adversary intentions and other facts possibly unknown to the analyst. This is not to suggest that adversary investment pools such as SWFs are a threat, *per se*, or that it is even likely that most adversaries will engage in any of these activities with a view to hidden objectives and geopolitical advantage. Free and open capital flows are just as important as free and open trade flows in the maintenance of a productive and balanced global economy, and those flows should not be impeded without good cause. Instead, those concerned with economic security in the context of national security must be aware of the risks and dangers with a view toward developing objective tests and metrics which may be applied to assess those risks and to facilitate a robust intelligence and analytic function with respect to them.

Dual-use technology is benign until the moment it is not. Avoidance of a financial Pearl Harbor will require expertise and unending vigilance. With this dual-use potential as necessary background, there are a number of potential national security threats from adversaries, along with some indications and warnings, which might be considered in assessing those threats. Among US agencies warning of these potential threats, some of the most thoughtful analysis has been provided by the Securities and Exchange Commission (SEC) in several speeches by former chairman Christopher

Cox and other senior officials. These warnings related primarily to market manipulation and insider trading. Market manipulation is always illegal, and insider trading may or may not be illegal depending on how the inside information was obtained.

One of the SEC's principal warnings concerns the use by sovereign wealth funds of privileged access to nonpublic information to engage in insider trading. Such information can be obtained formally through participation in board meetings (which is one of the reasons board seats in SWF acquisitions are so controversial in addition to the voting rights and influence which are obtained) and informally through observer status at board meetings and loaned executives and training programs, which allow officials of the SWF legal and possibly illegal access to the internal day-to-day operations of a target company. It is not the case that SWFs need to be in control of target companies to gain this kind of access. Most public companies will make CEOs or other well-placed executives available to meet with large shareholders if their holdings are on the order of 5 percent to 10 percent, which is well short of most control definitions. Informal gatherings—dinners, trade shows, golf outings, other sporting events, and shared rides on a corporate jet—are all useful venues for obtaining material nonpublic information. The SEC has long recognized dangers of this type but, in the case of SWFs, is particularly concerned with its limited ability to obtain cooperation and enforce legal jurisdiction in the sponsoring countries of the SWFs or the SWFs themselves.

Quite apart from the use of inside information for securities manipulation, stealing information is an end in itself when the information obtained involves military or civilian technology secrets such as formulae, processes, plans, and intentions. There are numerous instances of such theft, often conducted through classic espionage and often involving the Chinese. While the existence of such threats goes well beyond the problems of SWFs, the financial leverage, corporate control, and privileged access used by SWFs can either be a direct channel for espionage or a useful supplement to information sought or obtained through non-SWF espionage channels. Adversaries pursuing geopolitical and strategic aims will be motivated to avoid detection by intelligence organizations to successfully achieve their goals. Techniques useful in this endeavor include traditional methods of operational security such as need-to-know and cell-like structures, as well as multiple dealers, multilegged trades, misdirection, self-administration, derivatives, and announcement effects.

Multiple Dealers

Adversaries can easily open trading accounts with hundreds of major banks, broker-dealers, insurance companies, and other large financial intermediaries around the world. While this is not a large number for a bank or a dealer, it is an extraordinarily large number for an end user or adversary. Among other things, this allows large trades to be broken up into small parts and spread among many dealers so that no single dealer is aware of the full scope and size of the trade. This also facilitates trading in smaller lot sizes so that each trade does not have a large effect on market prices, whereas conducting the entire trade at once can deplete all available liquidity and move prices in ways adverse to the goals of the adversary. It also permits 24-hour trading, as these dealers may be dispersed geographically in all major trading time zones. In situations where trades have to be executed on centralized exchanges, similar techniques can be used by employing multiple individual floor brokers or electronic trading platforms to execute small parts of a much larger strategy.

Multilegged Trades

Trading strategies can be composed of numerous parts, often devised in long links or chains with certain elements canceling out part of the risk of certain other elements so that only the net or residual risk remains with the fund. An example might be selling puts on stock indices and simultaneously selling all of the underlying stocks in the index so as to neutralize the market risk in a situation where the put goes in-the-money (with the stock position being reduced or eliminated as the put goes deeper out-of-the-money) and, assuming the transaction were denominated in euros, selling euros forward against dollars to convert anticipated profits back into dollars if that is the base currency of the adversary. The foregoing would represent an effort to isolate exposure to theoretically mispriced options' volatilities while factoring out stock market risk and currency risk. More complex trades of seven, eight, or more individual parts can easily be constructed. By placing each leg of such a trade with a different dealer, no single dealer could understand the entire strategy and might even draw conclusions opposite to what is actually transpiring.

Misdirection

This is a simple technique, not unlike the head fake in football, where an adversary wishing to *buy* a large quantity of a particular security begins by *selling* some in a highly conspicuous manner and leaking the details of the sale such that rumors begin in the marketplace that “such-and-such large fund is selling.” This causes others to follow the trend, driving prices down, at which point the adversary begins to buy quietly at levels which are significantly more attractive than when the false signal was originally given.

Self-Administration

Administration is one of the least-understood aspects of fund operations. It is basically the back office, or operational side, of trading consisting of:

- comparison of internal trade tickets with tickets generated by trading counterparts;
- confirmation of trades and reconciliation of any discrepancies which arise;
- movement of cash and securities collateral into or out of the fund’s accounts, depending on whether margin is due to or due from the fund;
- periodic payments to or from counterparts under contractual arrangements, that is, swaps; and
- calculation of net asset value of the fund and periodic reporting to interested parties.

Many of these functions are handled by third-party administrators or prime brokers, or both, under bilateral contractual outsourcing agreements with the fund. However, it is possible to handle most, if not all, of these functions in-house by building up a large enough staff and installing sufficient systems and telecommunications links to banks, brokers, and sources of pricing information. This means that *no one outside the adversary's investment pool, not even the prime broker on whom the fund relies the most, can see the entire pattern of the adversary's trading*. Even derivative agreements with notional value many times the value of actual securities held at the prime broker can be administered internally and not shown to the prime broker. This practice is unusual, partly because it is extremely expensive to support the staff and systems needed to do it well. Many

private funds do not even attempt self-administration but rather rely entirely on third parties for all critical functions relating to movements of cash and securities, trade verification, position valuation, and calculation of profit and loss. However, an adversary desiring maximum secrecy as to its activities would internalize at least some of the fund administration functions; there are a number of very large and well-known private funds which do so today.

Derivatives

One of the core views informing the analysis of adversaries today is that they do not use leverage, either explicitly in the form of borrowed money or implicitly in the form of the notional value of derivatives. However, in the absence of transparency by adversaries, this view may simply be an act of faith; there is really no way to know if adversaries are using leverage or not. Any effort to manipulate or damage markets would almost certainly employ derivatives because they are an enormous force multiplier to the adversary's unleveraged holdings. Derivatives come in many forms, such as futures, swaps, and options, and can be conducted in combinations (e.g., a swaption is an option on a swap, and a commodity futures option is an option to enter into a futures contract, etc.) and in numerous strategies, such as caps, floors, straddles, strangles, volatility trades, and so forth. The attractions of derivatives in terms of disguising trading patterns are:

1. They do not appear on balance sheets under GAAP or IAS (although, the notional value of derivatives is included in the footnotes).
2. They often allow for greater leverage than exchange-traded instruments (including potentially infinite leverage if no “haircut” or good faith margin is required by the dealer).
3. They can be conducted on a bilateral or over-the-counter basis directly with a dealer, thus avoiding publicly reported price and volume tickers and exchange surveillance units (nota bene: a correlative disadvantage is that the dealer knows the adversary counterpart by name and may be able more readily to identify a suspicious trade, at least after the fact).

4. Derivatives can be highly customized to capture unique subsets or combinations of market activity rather than be limited to particular stocks, bonds, and indices.

Announcement Effects

This is simply the use of reputation, capital, and high profile in financial markets to achieve certain effects or to condition the behavior of others through a statement of intentions without actually concluding the intended conduct. Clearly it cannot be used repeatedly without diluting the reputation of the announcing party and therefore the effectiveness of the technique itself, but used sparingly and in the right circumstances, it can be quite effective without the deployment of any funds at all. It can take the form of an announcement to acquire a target company in a hostile manner or the abandonment of some previously announced plan or intention so as to cause a decline in the stocks of those companies in the abandoned sector.

These techniques should be evaluated in terms of their marginal impact on markets, which are often not as deep or liquid as outsiders assume. Any market will have some natural equilibrium between buyers and sellers based on distributed risk and liquidity preferences and varying interpretations of news. It is not necessary to overmatch the entire weight of the opposing view to manipulate a market. It is only necessary to add one's weight to the supporting view so that, at the margin, that view begins to predominate and the market begins to turn in the targeted direction. Such conduct by an adversary is then like adding a seventh person to one side of two evenly matched, six-person teams in a tug-of-war. The added person does not single-handedly have to beat the opposing six; just adding his or her weight to the six on that side causes the desired outcome. When considering how large adversary investment pools are and how thin many markets are, perhaps a better analogy would be adding six members to one side of the contest.

Another disturbing trend which can be supported by the use of adversary financial resources is the move toward private pricing rather than market pricing. This arises where a supplier and consumer enter into exclusive long-term purchase and sale agreements using formulaic prices not necessarily tied to market prices. Certainly, producers have always been willing to offer discounts for large-scale and long-term customers and to do so can be commercially reasonable. But these

more recent arrangements involve numerous other elements such as loans, infrastructure finance, exclusivity, military assistance, technology transfer, and other nonmonetary considerations which make it impossible to isolate the market price of some underlying commodity. As these arrangements proliferate, progressively more of the global supply of certain commodities is delivered off market, such that the leading exchange-traded markets become thinner, less reflective of true value, and correspondingly easier to manipulate. Some observers have questioned whether this phenomenon has not become the case in oil futures contracts; that is, progressively more oil is being traded in private off-market arrangements involving China, Iran, and Sudan, while Saudi Arabia is able to manipulate oil futures prices higher on relatively light transactions volume, especially just ahead of the closing bell (a practice known as “painting the tape”). Of course, all of the foregoing techniques of market manipulation are even more powerful when used in combination to achieve adversary objectives.

Another threat arises from the ease with which adversary fund sponsor nations, particularly China and Saudi Arabia, could increase the size of their SWFs overnight. China has allocated \$200 billion of its approximately \$1.7 trillion in foreign exchange reserves to its SWF; however, since most analysts agree that \$1.7 trillion is far in excess of what China reasonably requires either to defend its currency or to provide for emergency domestic economic needs, it could simply decree that, say, \$500 billion more will be added to its SWF overnight, making it larger than some estimates of the Abu Dhabi Investment Authority (ADIA) and the first or second largest in the world along with Saudi Arabia. Therefore, no particular comfort should be derived from current estimates of SWF absolute or relative size, because in some cases that size can be materially altered at will.

Finally, another area of concern is the high correlation among SWF size, transparency, and strategy. Norway is an example of a fund which is large, passive, and highly transparent. More disturbing are funds such as Saudi Arabia, China, and the ADIA which are large, nontransparent, and more strategically focused. In a world of limited intelligence resources and endless possibilities for manipulation, these metrics are useful in deciding how to allocate resources for observation, investigation, and counter-intelligence.

Vulnerabilities Due to Persistent Economic Stagnation

Much attention in the foregoing sections focused on potential malign financial acts and manipulations which could be inflicted on the United States by adversaries using their capital resources and investment pools. However, it may be that the greatest economic threat to national security arises not from exogenous attacks but from endogenous weaknesses arising from the current financial crisis. Endogenous weaknesses are likely to be exponentially more catastrophic than policy makers realize, in light of the power law and critical-state analysis advanced above.

Picking a bottom in financial markets is a popular pastime for investors and market analysts, but *economic security* analysis should be more concerned with what happens once the bottom is reached. All falling markets find a bottom eventually. The Dow Jones index may fall to 5,000 or even lower, but it will stabilize at some point. The important issue for *economic security* is what happens then. There seems to be an *a priori* assumption, or maybe just a large dose of wishful thinking, that when the markets bottom they will bounce back and quickly recover most if not all of the lost ground, eventually reaching new highs. This is certainly the mantra of buy-and-hold analysis, which says that it is foolish to sell stocks at low levels because you will miss the rebound or be out of the market on that hypothesized single day when the Dow rises 1,000 points and your losses are erased in one quick burst of euphoria.

But what if markets do not bounce back? What if they go down and stay down? The problem with the bounce-back view is that the pertinent evidence is much to the contrary and not at all encouraging. Volatility is a powerful feature of markets today, and we would not rule out large, one-day rallies in major stock indices from time to time. But the evidence from bubble behavior shows that once we hit bottom (and we may still be a year or more away, depending on the particular asset class or index considered), we should expect a prolonged and pernicious period at the bottom itself without any appreciable gains for years. The implications of this for tax revenues, fiscal stability, US economic power, and the ability of the United States to project hard or soft political power are daunting.

Market technicians refer to this as the “LUV problem,” using the letters L, U, and V to denote types of market behavior following a collapse of the kind we are now experiencing. Most optimistic and quite common in cyclical downturns is the V-shaped recovery in which the economy as a whole or some important subcomponent declines rapidly, hits bottom,

and bounces back quickly to the former high level and beyond in something that looks like a V when plotted on a graph. Such behavior has been observed many times, notably in the Russia-LTCM crisis of 1998–99 when the Dow Jones Industrial Average dropped from 9,337 to 8,028 (a decline of almost 15 percent) in 10 weeks, from mid-July to late-September 1998, but regained all of the lost ground by the following January and went on to a new high of 11,497 by the end of 1999. An investor who sold at the bottom on 25 September 1998 and stayed out would have missed a gain of 43 percent in the following 15 months. Examples such as this give the V story a lot of its power among salesmen and pundits.

Also not uncommon is the U-shaped recovery in which the economy or certain indices first fall, then remain at or near the bottom for an extended period before regaining their old highs. The difference between the V and U, of course, is the time spent bouncing along the bottom, but investors in both situations are encouraged that some rebound is in sight. A good example is the 1990–91 recession. In that episode, the Dow reached 2,900 at the beginning of July 1990 then fell to 2,510 by early October 1990—a 13.4 percent decline. However, by the end of November 1991 it had only recovered to 2,894, just below where it had been 17 months earlier. The period in between included an extended trough, which gives the U-shaped graph its name.

This brings us to the last of our trio of market graphs, the L-shaped recovery which, in fact, means no recovery at all, at least not in any time frame in which the recovery is causally linked to the original decline. An L-shaped phenomenon represents a sharp decline followed by a prolonged and open-ended period of stagnation or malaise in which the recovery, when it does finally arrive, probably needs to be jump-started by some extreme event, such as a war, that is dynamically disconnected from the cause of the decline. Many recessions are said to carry the seeds of their own recovery; the L-shaped decline decidedly does not. The most famous example of this is the Great Depression, in which the initial industrial contraction lasted 43 months (August 1929 through March 1933) followed by a weak recovery and a second decline of 13 months (May 1937 through June 1938) followed by a second weak recovery. The Industrial Production Index calculated by the Federal Reserve stood at 8.6646 on 1 July 1929 and 8.8115 on 1 March 1940; a total increase of only 1.5 percent after 10 years and 8 months.

Another famous example of L behavior is the Nikkei 225 index of leading Japanese stocks traded on the Tokyo Stock Exchange. After reaching an all-time closing high of 38,915 on 29 December 1989, it dropped precipitously and reached an interim low of 14,517 on 30 June 1995; a spectacular decline of 63 percent in 4 1/2 years.

But the story does not end there. After several rallies and new declines, the index ground down to other interim lows of 7,907 on 2 May 2003 and then 7,162 on 27 October 2008—a breathtaking 81.6 percent below the all-time high reached almost 19 years earlier. Around 1999, analysts started talking about Japan's Lost Decade. They still do but seem not to have noticed that another 10 years have gone by with no progress.

Another example closer to home is the NASDAQ Composite Index, which reached an all-time high of 5,048 on 10 March 2000 and today trades around 1,985; about 60 percent below the all-time high almost nine years later.

What the Depression, Nikkei, NASDAQ, and other similar episodes all have in common is that they were preceded by bubbles. The Depression and the Nikkei collapses both followed bubbles in real estate and stocks. The NASDAQ collapse was associated with the dot-com bubble bursting. Bubble behavior is characterized by a sudden rise from a previous low level which feeds on itself until it achieves a hyperbolic spike followed by an equally violent downward break then a prolonged period at a relatively low level compared to the previous peak. What is most striking is the enormous amount of time between the spike and the return to anything approaching that level. Recovering from the Depression took more than 10 years in terms of industrial production, although some markets, including commercial real estate, did not recover until the mid-1950s, 25 years after the 1929 crash. The Nikkei has still not returned to its peak after 19 years. The NASDAQ has not returned to its peak after nine years. Contrast these time periods to the pundits who declare (without analysis) that the stock market will reach new highs by late 2009 or that housing will recover by early 2010 and you begin to see the problem.

What the United States has just experienced is the breaking of numerous bubbles in residential housing, credit card debt, consumption versus savings, growth in derivative products, growth in structured products, and the willingness of investors to use leverage and sell volatility to chase illusory gains. These breaks are not characteristic of normal cyclical downturns of the type which occurred in 1990–91 and 2001 or even the more

severe downturn of 1973–75. The US economy has entered a prolonged and steep decline, which could reduce real GDP by 20 percent or more over the next several years with no immediate prospects for recovery.

The defense, intelligence, and diplomatic communities should expect a potent mixture of increased missions due to failed states, civil unrest, and enemy adventurism induced by our economic weakness and a world of diminished resources due to fiscal constraints and rising demands for bail-outs and the social safety net. The combination of increased missions and reduced resources will stress readiness, analytic and collections capability, and priorities across the board. In the LUV trio, the L-shaped recovery is the one most dangerous for national security and also the one most likely to occur.

Collapse of the US Economy and of the US Dollar as a Reserve Currency

A sudden, catastrophic collapse is even worse than the long, slow grind along the bottom described above. In the event of a collapse, the greatest threat to US national security is the destruction of the dollar as an international medium of exchange. Destruction does not necessarily mean total elimination, but rather a devaluation of 50 percent or more versus broad-based indices of purchasing power for goods, services, and commodities and the dollar's displacement globally by a more widely accepted medium. This can happen more easily and much more quickly than most observers imagine. The example below hypothesizes a single country, Russia, acting unilaterally to require that all of its exports (principally oil and natural gas) henceforth be paid for in a new gold-backed currency issued by a newly formed fiscal agent of the Central Bank of Russia based in London. However, variations on this plan can easily be imagined, including a joint announcement to similar effect by Russia and China or an even larger group under the auspices of the Shanghai Cooperation Organization and in affiliation with Iran.

The fictional press release from the Central Bank of Russia shown below illustrates how quickly and easily a Pearl Harbor-style dollar attack might be executed. This press release addresses numerous technical issues—including acceptable rule of law, enforceability, settlement and clearance facilities, lending and credit facilities, and so forth—all of which would be subject to further analysis and the articulation of detailed policies and procedures in a real-world

implementation. However, there is nothing new or particularly daunting in any of this. The point here is to show how easily this could be done.

Центральный банк Российской Федерации **The Central Bank of the Russian Federation (Bank of Russia)**

Press Release, May 13, 2010

MOSCOW: The Central Bank of the Russian Federation (CBR) hereby announces the following facilities and processes which are in place and available for counterparty inquiry immediately:

Point 1. CBR has arranged long-term use of vaults in Zurich and Singapore capable of holding up to 10,000 metric tonnes of gold. Security is provided by G4S and is state-of-the-art including multiple security perimeters, biometric scanning, advanced encryption standard 264-bit encryption of communications channels, blast proof construction and redundant power supplies. CBR has moved the gold component of the Russian Federation international reserves to these vaults amounting to approximately 500 metric tonnes.

Point 2. CBR announces the issuance of the Gold Reserve Dolar (GRD) to be issued in book-entry form by the Global Dolar Bank plc in London (SWIFT: GDBAGB) acting as fiscal agent of CBR. One GRD is equal to one kilogram of pure gold (the Fixed Conversion Rate [FC Rate]). The GRD is freely convertible into gold at the FC Rate and is freely transferable to any designated party on the books of the Global Dolar Bank or any other approved bank maintaining GRD accounts. CBR invites creditworthy and prudently regulated banks worldwide to open GRD accounts and facilities on their books which can be cleared on a real-time gross settlements basis via Global Dolar Bank. The Global Dolar Bank clearance, settlement and accounts systems are operated on IBM Blade Servers using Logica CAS++ payments solution software.

Point 3. The Gold Reserve Dolar may be acquired in any quantity by delivery of the appropriate amount of gold at the FC Rate to any one of the vaults noted in Point 1. Upon receipt of good delivery, the pertinent number of GRD's will be credited to the delivering party's account at Global Dolar Bank. Gold Reserve Dollars are freely redeemable into gold in any quantity by instruction to Global Dolar Bank and by providing delivery instructions to one of the vaults.

Point 4. All matters pertaining to title, transfer and operation of GRD's and Global Dolar Bank plc are determined solely under English law and heard exclusively in English courts. All matters pertaining to physical possession, delivery and receipt of gold in the vaults will also be determined solely under English law and may be heard either in English courts or courts located in Switzerland and Singapore respectively. Opinions of law from Queen's Counsel and leading counsel in Switzerland and Singapore respectively are available for inspection.

Point 5. Effective immediately, all sales of Russian exports may be negotiated, denominated and paid for in GRD's only. The existing Russian Ruble will continue to be legal tender for domestic transactions conducted solely by parties within the Russian Federation.

Point 6. Effective immediately CBR announces a tender for unlimited quantities of gold. Any gold tendered under this facility will be paid for by delivery to the seller of U. S. Treasury bills, notes or bonds at an exchange value calculated by reference to the market value of securities determined in USD closing prices on Bloomberg and the market value of gold determined in USD by the London fixing, both for the average of the three business days immediately preceding the settlement date of the exchange.

Point 7. CBR will provide GRD lending facilities and GRD swap lines via Global Dolar Bank plc for approved counterparties with eligible collateral as determined in the sole discretion of CBR.

The intention of the Central Bank of Russia would be to cause a 50 percent overnight devaluation of the US dollar and to displace the dollar as the leading global reserve currency. The expected market value of gold resulting from this exchange offer is \$4,000 per ounce; in other words, the market clearing price for gold as money on a one-for-one basis. Russia could begin buying gold at the market price, perhaps \$1,000 per ounce initially; however, over time its persistent buying would push gold-as-money to the clearing price of \$4,000 per ounce. Gold selling would stop long before Russia was out of cash, however, as market participants realized that they preferred holding gold at the new higher dollar-denominated level. Gold will actually be constant, for example, at one ounce = 25 barrels of oil; it is the dollar that depreciates. In this scenario we are not pricing gold in terms of dollars, we are repricing dollars in terms of gold; so, one dollar is eventually redefined as the equivalent of 1/4000th of an ounce of gold. This can be a very attractive trade-off for a gold power like Russia. Thereafter, the world could become divided into gold haves and have nots, the same way it is with oil reserves today. For those dealing in gold, oil, grain, and other commodities, nothing changes; only the dollar goes down. Basically, the mechanism is to switch the *numeraire* from dollars to gold; then things start to look different, and the dollar looks like just another repudiated currency, as happened in Weimar and Zimbabwe. Russia's paper losses on its dollar securities are more than compensated for by (a) getting paid in gold for its oil, (b) the increase in the value of its gold holdings (in dollars), and (c) watching the dollar collapse worldwide.

Another important concept is the idea of setting the global price by using the marginal price. Russia does not have to buy all the gold in the world. It just has to buy the marginal ounce and credibly stand ready to buy more. At that point, all of the gold in the world will reprice automatically to the level offered by the highest bidder, in this case Russia. The market may test Russia's willingness to buy, just as hedge funds periodically test the credibility of central banks to defend their currencies; however, before Russia would be forced to buy \$200 billion worth of gold (about 1,500 metric tonnes at \$4,000 per ounce, \$200 billion being about how much US dollar liquidity they have), the world would decide it likes holding onto gold at the new price. So the world will wake up to find a new dollar/gold equilibrium. If China joins Russia in this plan, its success is assured.

The question for the national security community is not whether this can happen—it can. The questions instead are: Can steps be taken to prevent this from happening? What are the key indications and warnings that it is actually happening? What are the immediate consequences to US national security of this happening?

This plan takes into account the current reality. There is no existing currency which can displace the dollar; they all have worse problems, and there are not enough liquid instruments denominated in those currencies to absorb world savings. But a new currency could be launched as described above, backed by gold at a fixed rate, cleared and settled through existing banking channels, and with swap and lending facilities available. In principle, a private institution could do this (as had been done routinely prior to 1933), but a nation-state is a more credible candidate. The United States seems not to take the idea seriously and benefits from its ability simply to print dollars. China has little gold and too much to lose from being financially codependent on the United States. The European Union is not a country, and most of the gold in Europe belongs to the nation-states, not to the European Central Bank. The obvious candidate is Russia, which has very little to lose; its currency is worthless abroad and imploding at home, but it does have a decent gold supply above ground—about 500 metric tonnes—and excellent mining capacity. The objections to Russia have to do with trust and the rule of law, but these are easily solved as described above by using Switzerland and London as physical and legal venues. All it would take is for the Russians to trust themselves—not an insignificant obstacle.

The United States could prevent this by preempting it, just by issuing a gold-backed dollar itself using the 4,600 metric tonnes available in Fort Knox (over nine times the Russian gold supply). Another approach is to convene a Bretton Woods II conference, likely a G-20 meeting in today's world, and implement this on a global basis. The standard objection to gold-based money is "there's not enough gold." Of course this argument is specious because there is always enough gold; it is just a matter of price. At \$900 per ounce, the total above-ground world gold supply will not support the total money supply of the leading trading nations. But at \$4,000 per ounce, the gold supply is adequate. Other objections to a gold-backed currency based on the failures of the Gold Exchange Standard of 1926–31¹⁵ are *in apropos* because those failures had nothing to do with gold and everything to do with mispricing; central bankers of the 1920s

wanted to revert to pre–World War I prices and exchange rates, which were not sustainable after the paper money inflation of the war years. What is needed today is a unilateral or multilateral repricing to a realistic level, which is exactly what President Roosevelt attempted in 1934 when he redefined the dollar from 1/20th of a gold ounce to 1/35th. In effect, one US dollar would now be defined as equivalent to 1/4000th of a gold ounce. This path, while practical, is entirely unlikely because of the lack of serious political or academic interest or understanding and the plain convenience of printing dollars. A more likely outcome is that the United States will not act to prevent the destruction of the dollar until something like that is already underway.

As for indications and warnings, they are easy to specify and detect; the issue for the national security community is whether anyone is looking and whether the proper analytical tools are in place. Russia's gold reserves, denominated in dollars at current prices, increased from \$14.5 billion to \$15.5 billion in January 2009. Why? Who is minding that store? A dedicated watch function combined with appropriate analytics could provide some early warning of an effort to launch a gold-backed currency, especially since either China or Russia would have to place the gold outside their home countries to engender trust among those willing to rely on the new currency. Acquisition of gold by central banks and physical movement of gold to neutral vaults could all be tracked using information from exchanges, dealers, banks, and secure logistics firms such as Brink's and G4S. Techniques such as calculating the second derivative of the slope of a curve tracing the time series of the spread between spot physical and Comex near-month gold futures may be especially revealing.

The consequences of failing to detect the threat or to act on it are, in a word, devastating. Imagine a world in which the price of oil measured in units of gold is held constant at one ounce = 25 barrels, but the price in dollars instantaneously becomes \$155 = one barrel based on the new dollar/gold exchange rate. Then apply similar ratios to all US imports of commodities and manufactured goods. The result is that the US would re-import the hyperinflation it has been happily exporting the past several years. US interest rates would skyrocket to levels last seen in the Civil War to preserve some value in new dollar investments. US exports of services such as insurance, education, software, consulting, and banking could fare better, however, if priced in the new unit of account. The United States, China, and Japan might unite in a closed dollar bloc to fend off the im-

pact of the new Russian gold currency, but at best this would restrict world trade; it seems more likely China and Japan would act in their own self-interest and try to make peace with the new currency in terms of their own paper currencies. Gold-producing nations such as Australia, Canada, and South Africa might do relatively better than some others. Large gold-owning nations such as the United States, the United Kingdom, and Germany might stabilize by joining the new world currency, but this is more likely to occur after suffering initial disruption rather than proactively guiding the process.

China could engage in its own attack on the US economy quite apart from whether it chose to join Russia in the use of the gold standard based on a new unit of account or even lead such an effort itself. China's other line of attack runs through its voluminous holdings of US Treasury debt (estimated to be well in excess of \$1 trillion) and the need of the United States for China to continue to purchase new issues of such debt, likely to be \$5 trillion or more taking into account baseline deficits, temporary stimulus spending, new budget proposals, financial rescues (such as TARP, TALF, Bear Stearns, and others) and as yet unrealized losses and associated bailouts arising from new losses in credit cards, student loans, auto loans, corporate bonds, commercial real estate, and other nonsustainable credit. China could simply dump, say, \$100 billion of its longest-maturity US Treasury securities on the market at one time combined with an announcement that it intended to sell far more when, as, and if market conditions warranted. Such an action would cause an immediate and substantial rise in intermediate- to long-term US interest rates. This is the sector which is most relevant to mortgage and corporate credit (versus the short-term sector, which is more relevant to interbank lending, money market investments, and other cash substitutes). This would further weaken the already weak housing and manufacturing sectors and likely cause a substantial increase in unemployment, home foreclosures, bank failures, and corporate bankruptcies. The end result would be to force the economy into an unpalatable choice between hyperinflation and protracted economic decline resembling the Great Depression, perhaps worse.

The conventional objection to such action on the part of the Chinese is that they would hurt the value of their own securities and incur massive losses on their portfolio holdings. This objection is intellectually and analytically shallow. Portfolio investors may choose to view their holdings as held to maturity or held for trading. It is true that if China were to

attempt to liquidate holdings beyond the initial \$100 billion suggested above that they would receive substantially less than par value and thereby realize capital losses. However, China is under no such constraint and can simply hold onto its securities until maturity and receive all coupons and 100 percent of principal at maturity, thereby suffering no losses beyond those incurred on the initial \$100 billion. One way to understand this is to think of homeowners with no mortgage whose homes have declined in value. If they intend to sell immediately to move to another city, then the decline in value may convert into a realized capital loss. However, if they intend to remain in those homes for the rest of their lives, the temporary decline in value is a financial artifact of no particular consequence. The Chinese are like the homeowners who intend to stay in their home forever. By operating through the marginal transaction (in a manner similar to that in which the Russians might operate in gold), they can affect the global term structure of interest rates without suffering actual capital losses beyond those incurred to move the market in the first instance. The announcement effect of the first sales, backed by a credible threat to sell more, will be enough to insure the semipermanence of increased intermediate-term US interest rates.

A second standard objection to this course is that the Chinese would suffer from decreased exports to the United States if they caused the US economy to collapse in this manner. However, China may find this an opportune time to stimulate internal domestic demand and convert its economy from an export-led model to a consumption-led model relying on internal markets to increase consumption.

Another more subtle but equally effective tactic which the Chinese might employ is to move down the yield curve. This is done by maintaining total Treasury holdings constant but allowing older, long-dated notes to mature and then reinvesting proceeds in shorter maturities. For example, China has a certain amount of US Treasury five-year notes which it purchased in 2004 and which are maturing in 2009. When those notes mature this year, China can choose to reinvest in one-year Treasury bills instead of notes with longer maturities. By doing so repeatedly, China will greatly shorten the maturity structure of its overall portfolio. This will give it greater liquidity and optionality in how it deploys its cash in the future (because its bills will always be close to maturity so it can redeploy cash-at-maturity without “selling” or “dumping” anything). This will also “steepen” the yield curve—meaning shorter maturities where demand is

greatest will have lower interest rates, and longer maturities where demand is less will have higher interest rates, *ceteris paribus*, thus increasing the differential between short-term and long-term rates represented as a steeper slope on a yield curve graph. This will cause higher interest rates for US mortgages and corporate debt *without* causing capital losses in China, since the effect will be achieved incrementally through the continual rollover process rather than through abrupt dumping. This is the interest rate equivalent of the death by a thousand cuts.

In summary, a well-timed and well-executed attack on the US Treasury securities market could result in a devastated US economy. The effects could involve depression or hyperinflation while China suffers very modest capital losses and continues to grow its economy with less reliance on exports to the United States. The destruction of the dollar through Russian unilateral issuance of a new gold-backed reserve currency and the destruction of the US economy through China's investment policies are the twin towers of external threats to US *economic security*.

National Responses

Despite the range of potential national security threats posed by adversaries and the diverse methods and immense resources at their disposal, investee nations such as the United States and others are not without considerable tools at their disposal to deter, detect, and defend against hostile or subversive actions by adversaries. These are considered below.

The first line of defense for the United States is the Exon-Florio Amendment to the Defense Production Act of 1950 which permits voluntary review of foreign investments in the United States by the Committee on Foreign Investment in the United States (CFIUS), a 13-member interagency body chaired by the US Treasury and with Cabinet-level participation from Treasury, Commerce, Defense, Energy, State, Homeland Security, Office of the Attorney General, Office of Management and Budget, Council of Economic Advisors, Office of the United States Trade Representative, National Economic Council, National Security Council, and the Office of Science and Technology Policy. The director of national intelligence and the secretary of labor are also nonvoting *ex officio* members. Exon-Florio and the role of the CFIUS were recently amended and expanded through the Foreign Investment and National Security Act of

2007 (FINSA) and an amendment to Executive Order 11858 issued on 23 January 2008.

The FINSA continues to allow for voluntary filings by foreign entities acquiring US companies but also allows the CFIUS to institute reviews on its own initiative. The FINSA applies to “covered transactions,” defined as those involving a merger, acquisition, or takeover of a US company which could result in foreign control of that company. Current regulations use 10 percent ownership as a threshold for control; however, it is not clear that this is the only indicia, and it has been urged that other indicia should expressly be adopted. Once a review has commenced, the CFIUS has 30 days within which to determine either that no threat to national security exists or that any potential threat has been mitigated through agreement with the parties. If, after 30 days, it is determined that a threat to national security does exist and no satisfactory mitigation has been achieved, the transaction moves to a 45-day investigation, at the end of which the CFIUS provides a written report and recommendation to the president, who has an additional 15 days to decide whether to suspend or prohibit the proposed transaction. However, acquisitions by SWFs (or other entities controlled by foreign governments) and acquisitions of critical infrastructure by any party will automatically attract the 45-day investigation, subject to certain narrow exceptions. The FINSA also contains provisions relating to withdrawals from proposed acquisitions, reports to Congress, and criteria for determining both threats to national security and the definition of critical infrastructure. The director of national intelligence is given the role of coordinating the input and analysis of all members of the intelligence community in support of the CFIUS’s role in evaluating threats to national security. The CFIUS has been a powerful and high-precision tool for protecting US national security interests while at the same time allowing the vast majority of proposed acquisitions to proceed (often with enforceable mitigation agreements) so as to maintain the US reputation for open and nondiscriminatory capital markets.

Securities Law

The United States has a comprehensive set of laws governing securities, futures, and derivatives transactions contained in the Securities Act of 1933, the Securities Exchange Act of 1934, the Investment Advisers Act of 1940, the Investment Company Act of 1940, the Commodity Exchange Act, and other acts, all as amended to date. These statutes contain robust

antifraud provisions and reporting provisions governing such matters as takeovers, 5 percent or greater positions; licensing of advisors, brokers, and exchanges; large trader reports; large position reports; margin requirements; reporting of purchases and sales by company officers and directors; short sales; fiduciary duties; conflicts of interest; and many other matters designed generally to provide fair, efficient, and transparent markets. The laws, rules, and regulations are implemented by large staffs at the SEC and the Commodity Futures Trading Commission (CFTC) dedicated to market supervision, including delegated authority to exchanges and their self-regulatory organizations. Enforcement is supported through SEC and CFTC investigatory and subpoena power, administrative judges, and access to the resources of the federal courts, the FBI, and the Department of Justice, as needed. Importantly, these rules (with few exceptions) apply equally to adversaries with regard to their transactions in US markets, with US counterparties, or through means of US interstate commerce. However, as noted above, where adversary investment pools and their home countries do not cooperate in investigations or allow access to information, enforcement of these rules against adversaries can be problematic.

Banking Law

Financial institutions such as banks and thrifts are subject to extensive regulation and oversight in addition to that which may be conducted by the SEC with respect to trading in the public securities of these institutions. The United States has numerous bank, thrift, and bank holding company statutes and multiple regulatory bodies to enforce these, including the Board of Governors of the Federal Reserve System, the Office of the Controller of the Currency, and the Office of Thrift Supervision, among others. The principal statute which would govern adversary firm acquisition of banks or thrifts is the Bank Holding Company Act of 1956 as amended by the Gramm-Leach-Bliley Act (1999). These statutes require regulatory filings and approval when certain investments in financial institutions exceed 5 percent and have other progressively more onerous requirements at ownership levels in excess of 19.9 percent and 24.9 percent. Depending on the exact type of instruments, voting rights, and contractual arrangements involved, these thresholds can be deemed to constitute “control” and are prohibited to acquirers engaged in nonbanking commercial activities. Separate review processes are applied to foreign acquirers having to do with banking regulation in their home countries. As a practical

matter, no adversary could legally obtain control of a US bank under these statutes.

Antitrust Law

The twin pillars of antitrust law are the Sherman Antitrust Act of 1890, which outlaws contracts or conspiracies “in restraint of trade or commerce,” and the Clayton Antitrust Act of 1914, which outlaws certain kinds of price discrimination, exclusive dealings, mergers which lessen competition, and directors serving on the boards of two or more competing companies. In addition, the Hart-Scott-Rodino Antitrust Improvements Act of 1976 amends the Clayton Act to provide for advance notification of certain mergers, tender offers, and acquisitions and requires a 30-day waiting period after notice and before closing during which regulatory agencies may request further information to evaluate whether the proposed transaction violates any antitrust laws. It is fair to say that many adversary investment pool transactions in Latin America, Africa, and Asia would violate US antitrust laws if conducted subject to the jurisdiction of the United States; in other words, certain acquisitions are done precisely for the purpose of price discrimination, exclusive dealings, to establish interlocking directorates, and so forth. The fact that these laws exist (and that similar laws exist in the EU) acts as a powerful check on certain abuses against fair trade, which might be pursued by an adversary but for these laws.

Export Administration Act

The Export Administration Act (EAA), which has been reauthorized and amended several times since its origin in 1949, establishes statutory authority and an administrative framework for regulating exports of dual-use or sensitive commodities, software, hardware, and information technology. The traditional bases for such restrictions were to prevent scarcity in the United States, to implement or support the foreign policy of the United States (including broad-based goals, such as human rights), and to prevent the export of goods with military applications to countries which posed a threat to US national security. While the EAA is a first line of defense from the perspective of US exporters and commodity producers, it is a kind of “second line of defense” after the CFIUS from the perspective of adversary firms and investment pools. While the CFIUS prevents acquisitions of sensitive US technology by foreign buyers in the

first instance, EAA can prevent target companies controlled by adversaries from exporting sensitive technology if the target acquisition had somehow escaped CFIUS intervention.

Tax Law

The implications of taxation on foreign investors in US capital markets is perhaps one of the least understood and most underappreciated tools in the US arsenal of legal defenses to hostile actions by adversaries. As in the case of securities laws discussed above, the field is too large and complex to be summarized adequately within the scope of this article. However, an overview of one particularly fraught area might be helpful in explaining what a powerful tool this can be. In general, US citizens, US permanent residents, and US corporations pay US income tax on global income regardless of where their assets are owned or activities are performed. Nonresident foreign persons, including adversary-country firms and investment pools, generally do not pay US taxes except to the extent that they are considered to be engaged in a trade or business in the United States or except for certain withholding taxes on payments of interest, dividends, royalties, and other recurring items from US sources. This begs the question of which activities do or do not constitute being engaged in a US trade or business.

Generally, the purchase and sale of securities and derivatives, including through US-based agents, will not subject an adversary firm or investment pool to US taxation (known as the securities trading “safe harbor”). However, some adversary firms may have been overly aggressive with respect to the safe harbor and may have exercised undue control with respect to US business activities or have become involved in loan origination, purchase, and sale activities which may not qualify for safe harbor treatment. In addition, some adversary firms are known to have arranged total return equity swaps with major investment banks so that they receive the economic benefit of dividends paid on underlying shares without suffering US dividend withholding taxes, since they purport not to own the shares themselves. To the extent these activities may constitute improper tax avoidance or illegal tax evasion, the adversary firms and investment pools, upon IRS audit and possible referral to the Department of Justice, may face back taxes, late interest, fines, penalties, and imprisonment. These tools should not be employed lightly, but they are powerful antidotes to certain overly aggressive investment techniques by adversaries.

International Emergency Economic Powers Act of 1977 (IEEPA)

The IEEPA is sometimes referred to as the “nuclear option” of financial regulation and not without cause. It allows the president to block transactions, freeze accounts, order embargoes, and confiscate assets in connection with any unusual and extraordinary threat to the national security, foreign policy, or economy which originates in whole or substantial part outside the United States. The act does require reporting to Congress and further requires that declared emergencies be renewed annually to remain in effect; emergencies may also be terminated by Congress under certain circumstances. Notwithstanding these reporting and termination provisions, the powers granted to the president to deal with economic or national security emergencies caused by actions of adversaries are near plenary. The United States has, in fact, used these powers many times in the past and has well-established executive branch processes and procedures involving the Departments of Treasury, State, and Justice and other departments and offices for the implementation and enforcement of any executive orders pursuant to the IEEPA.

Other Statutes and Regulations

In addition to the foregoing, there are numerous federal and state statutes and government agency regulations which limit the ability of foreign owners, including adversaries, to acquire interests in companies involved in particular industries, including telecommunications, shipping, and casinos, among others. Importantly, the US defense industry operates pursuant to the *National Industrial Security Program Operating Manual*, which governs access of all defense contractors to classified material and imposes stringent limitations on the access of foreign officers, directors, and shareholders to any such information.

In short, the United States is well prepared from a statutory and regulatory perspective to protect its national security interests from foreign control and dissemination to foreign parties, including adversary firms and investment pools. The United States also has seasoned and well-staffed agencies and private-sector partners to provide oversight and enforcement with respect to those laws, regulations, and processes. However, enforcement of those rules abroad in the host countries of adversaries can be problematic, especially if those countries refuse cooperation. And, no set of laws is proof against deliberate, malicious, and well-considered efforts to defeat or evade them, especially if the objective is not the acquisition and

control of a particular company or technology but disruption of critical infrastructure including the financial system itself. Defense against this type of activity requires a thorough understanding of the techniques which might be employed, portfolio metrics to assist in identifying situations where adversary behavior might be other than commercial investment management, development of a matrix of indications and warnings, and sound intelligence and analysis with respect to the intentions and actions of adversaries.

Fortunately the United States is not alone in this effort and is not the only country which has reservations about the actions of adversaries. This argues not only for other countries to be involved individually in seeking solutions to perceived problems of adversary investment but for truly multilateral solutions so that adversaries do not attempt to forum shop or play off one country's lax rules against another. A broad-based, multilateral solution also gives the investee countries more bargaining leverage because an adversary that does not want to cooperate with such rules may find it has no large, liquid, and well-regulated markets in which to invest.

Financial “Choke Points” and Clandestine Action

In addition to the overt national and multilateral policy tools described above, the United States can employ clandestine collections to obtain the information it needs to ascertain if adversary intentions are commercial or malign and to penetrate and disrupt those efforts which may be malign. To do so, it is critical to understand the financial and legal choke points which exercise the same influence in the commercial world as critical straits like Hormuz and Suez do in the world of maritime commerce and naval warfare.

Transactions of the type described in this article do not occur in a vacuum. Adversaries must have professional advisors and transactional counterparties to pursue their trading and investment objectives. It follows that those advisors and counterparties have information on adversary investment positions and structures at least to the extent that they are conducted in conjunction with that advisor. Adversaries require the use of legal entities, derivative contracts, trust agreements, account agreements, and numerous other formation and contractual documents. Local officials will also insist on minimal corporate formalities and periodic financial statements, even in those jurisdictions most lax in this regard.

While these opaque structures may be initiated by adversaries, they are enabled by a legion of lawyers, accountants, bankers, dealers, administrators, and others. These professionals typically operate within professional firms; however, some may act as sole practitioners or as small boutiques, particularly in offshore banking jurisdictions and tax havens, such as Cyprus or the Cayman Islands. These professionals not only perform indispensable services, they also may take the lead in suggesting the structures and techniques for managing and operating them. Portfolio managers and government agents at adversary funds may have goals in mind (e.g., “we’d like to exert de facto control of Company X without our interests becoming transparent, reportable, or easily traced”). It is often not difficult to invent what are superficially commercial reasons for such requests; however, professionals are often indifferent to the initiating party’s motivations and will simply execute the request. As a result, the professionals described above, particularly lawyers and accountants, will be the most likely parties to structure opaque transactions. It follows that they will have the greatest knowledge about the actual parties in interest and the intricacies of the structures.

While professional and financial firms use standard techniques of operational security, including limited access, biometric scanners, passwords, and need-to-know protocols, these are typically not as stringent as the OPSEC used in the intelligence community. In particular, a culture which discourages social engineering in intelligence work does not exist in the worlds of law, accounting, and finance, and dedicated counterintelligence resources are not nearly as robust. As a result, it is possible for a single well-placed professional within one of these firms to obtain access to a wide array of information without raising undue suspicion. This is even truer in the offshore financial centers, where standards are more relaxed and the choke points are even narrower, than in the large money centers.

For example, in a leading offshore finance jurisdiction, the Cayman Islands, there are perhaps 15 law firms which handle more than 90 percent of the transactional work. Of these, two firms—Walkers and Maples—handle about 50 percent. A source at one law firm can have good information about transactions at a rival law firm to the extent that the rival firm is representing the other side of a single transaction. Therefore, a single agent-in-place at a firm like Walkers with enough seniority and professional stature would be in position to obtain a material percentage of all the legal information on real parties in interest to otherwise opaque-structured financial transactions.

The same phenomena would exist, perhaps in more concentrated form, in smaller jurisdictions such as the Channel Islands or Cyprus.

In short, recruitment of agents among the ranks of professionals in law, accounting, and administration firms—as well as banks, brokers, and dealers, particularly in offshore jurisdictions—is an opportunity nonpareil to penetrate the opaque and complex structures described elsewhere in this article for the purpose of ascertaining the true positions and intentions of the adversary investment pool. Of course, such human intelligence activities can be greatly supplemented and enriched by a host of technical means targeted on these same professional and financial firms.

Conclusion

A clear understanding of the structures and vulnerabilities of the financial markets points the way to solutions and policy recommendations. These recommendations fall into the categories of limiting scale, controlling cascades, and securing informational advantage.

To explain the concept of limiting scale, a simple example will suffice. If the US power grid east of the Mississippi River were at no point connected to the power grid west of the Mississippi River, a nationwide power failure would be an extremely low-probability event. Either the “east system” or the “west system” could fail catastrophically in a cascading manner, but both systems could not fail simultaneously except for entirely independent reasons, because there are no nodes in common to facilitate propagation from critical state to catastrophic failure across systems. In a financial context, governments should give consideration to preventing mergers that lead to globalized stock and bond exchanges and universal banks. The first-order efficiencies of such mergers are outweighed by the risks of large-scale failure, especially if those risks are not properly understood and taken into account.

The idea of controlling cascades of failure is, in part, a matter of circuit breakers and pre-rehearsed crisis management so that nascent collapses do not spin into full systemic catastrophes before regulators have the opportunity to prevent the spread. The combination of diffuse credit and layered leverage makes it infeasible to assemble all of the affected parties in a single room to discuss solutions. There simply is not enough time or condensed information to respond in real time as a crisis unfolds. One significant circuit breaker which has been discussed for over a decade but

which has still not been implemented is a clearinghouse for over-the-counter derivatives. Experience with clearinghouses and netting systems such as the Government Securities Clearing Corporation shows that gross risk can be reduced 90 percent or more when converted to net risk through the intermediation of a clearinghouse. Bearing in mind that a parametric decrease in scale produces an exponential decrease in risk in a nonlinear system, the kind of risk reduction that arises in a clearinghouse can be the single most important step in the direction of stabilizing the financial system today; much more powerful than bailouts, which do not reduce risk but merely bury it temporarily.

A clearinghouse will also provide informational transparency that will allow regulators to facilitate the failure of financial institutions without producing contagion and systemic risk. Such failure (what Joseph Schumpeter called “creative destruction”) is another necessary step on the road to financial recovery. Technical objections to clearinghouse implementation based on the nonuniformity of contracts can be overcome easily through consensual contractual modification with price adjustments upon joining the clearinghouse enforced by the understanding that those who refuse to join will be outside the safety net. Only by eliminating zombie institutions and creating breathing room for healthy institutions with sound balance sheets can the financial sector hope to attract private capital to replace government capital and thus restart the credit creation process needed to produce sound economic growth.

In summary, Wall Street’s reigning risk-management paradigm, consisting of a combination of stochastic methods in a normally distributed model combined with stress testing to account for outliers, is a manifest failure. It should be replaced with the empirically robust model based on nonlinear complexity and critical-state dynamics. Applying such a paradigm leads to the conclusion that the current financial crisis is likely to get far worse and threaten national security because the system has been scaled to unprecedented size prior to the onset of the catastrophe. It also points the way to certain solutions, most importantly the creation of an over-the-counter derivatives clearinghouse, which will descale the system and lead to an exponential decrease in actual risk. Such a clearinghouse can also be used to improve transparency and manage failure in ways that can leave the system far healthier while avoiding systemic collapse.

Notwithstanding an earlier period of globalization during 1880 to 1914, there can be little doubt that the current period of globalization

from 1989 to 2009, beginning with the fall of the Soviet Union and the end of the Cold War, represents the highest degree of interconnectedness of the global system of finance, capital, and banking the world has ever seen. Despite obvious advantages in terms of global capital mobility facilitating productivity and the utilization of labor on an unprecedented scale, there are hidden dangers and second-order costs embedded in the sheer scale and complexity of the system. These costs have begun to be realized in the financial crisis which began in late 2007, have continued until this writing, and will continue into the future.

Among the emergent properties of this complexity is exponentially greater risk of catastrophic collapse leading to the complete insolvency of the global financial system. This dynamic has already begun to play out and will continue without the implementation of appropriate public policies which, so far, are not in evidence. More to the point, this ongoing instability lends itself to amplification through the actions of adversaries who can accelerate destabilizing trends through market manipulation and the conduct of marginal transactions in critical securities and commodities, such as US Treasury debt, oil, and gold.

The US response should include three components: (1) improved public policy to stabilize the system, including temporary nationalization of banks to remove bad assets, preemptive study and consideration of a return to the gold standard, higher interest rates to support the value of the US dollar, increased tolerance of failure in financial institutions to reduce moral hazard, and mandatory use of central counterparty clearing to mitigate the impact of institutional failure and descale the system to make it more robust to attack; (2) an expert market-watch function and all-source fusion with improved financial counterintelligence and clandestine action to detect and disrupt attempted malicious acts in global capital markets by adversaries; and (3) an offensive capability in global capital markets, including asset freezes, asset seizures, and preemptive market manipulations.

Finally, the vulnerability of companies and technologies to control and diversion by adversaries must not be overlooked. This requires improved interagency coordination of the various legal and forensic tools at the disposal of the United States in the areas of securities, antitrust, taxation, banking, export restrictions, direct foreign investment restrictions, sanctions, and emergency economic powers. These tools should be supplemented by improved financial counterintelligence and new automated

tools focused on supply-chain linkages, nonobvious relationship awareness, and market price anomalies. **SSQ**

Notes

1. John F. Cogan, Tobias Cwik, John B. Taylor, and Volker Wieland, *New Keynesian versus Old Keynesian Government Spending Multipliers*, February 2009, www.volkerwieland.com/docs/CCTW%20Mar%202.pdf.
2. For an excellent overview of these developments, see Peter L. Bernstein, *Capital Ideas: The Improbable Origins of Modern Wall Street* (New York: John Wiley & Sons, Inc., 2005).
3. More recent embellishments on the simple bell-curve model include T-models of implied volatility and GARCH (generalized auto-regressive conditional heteroskedasticity); however, these methods are also flawed because they continue to rely on normal distributions as a base case and frame of reference instead of abandoning the flawed methodology completely.
4. One reason EMH-Gaussian paradigm practitioners cling to the paradigm in the face of mounting contradictory empirical evidence is that the normal distribution curve lends itself nicely to the use of differential calculus, which is the branch of mathematics dealing with continuous phenomena as exemplified by the smooth shape of the bell curve. Calculus is a powerful tool, and it has been put to enormous use in solving the problems posed by modern financial economics. It has proved so efficacious that financial economists are loath to consider nonlinear dynamical systems (i.e., the new paradigm) because such systems are best approached with difference equations of the general form $x_n = rx(1-x)$ in which x is normalized at a value such that $0 < x < 1$ and represents the variable being studied (e.g., the level of a stock index today), X_n represents x in the next time period (e.g., level of the stock index in a future period), r is a function (i.e., growth rate of index) and $(1-x)$ is a limit, (i.e., while a small value of x will begin growing over time in accordance with the function with little perturbation by $(1-x)$, at progressively higher levels of x , the perturbations will increase such that x declines precipitously before growing again. Whether this system ever achieves a “steady state” depends on how the function is tuned. A graph of the output of this equation will display irregular growth with periodic steep declines; very much like actual market behavior. Importantly, such “difference equations” (unlike differential equations) display discontinuities rather than continuous functions. While reflecting empirical reality more accurately, such equations in more complex quadratic and trigonometric forms can be difficult to solve and are more difficult to apply to selected “problems” than differential equations. In this sense, EMH-Gaussian paradigm practitioners can be likened to the wayward professor at night looking for his dropped car keys several blocks from his parked car. When asked why he’s on the wrong block, he replies “because the light is better.” Theorists cling to the EMH-Gaussian paradigm, in part, because “the math is better.” They are still on the wrong block.
5. Nassim Nicholas Taleb, *The Black Swan: The Impact of the Highly Improbable* (New York: Random House, 2007).
6. This revolution in the intellectual framework for understanding capital markets corresponds well to the famous process of the “paradigm shift” outlined by Thomas E. Kuhn in *The Structure of Scientific Revolutions*, 3rd ed. (Chicago: University of Chicago Press, 1996). However, as Kuhn pointed out, the paradigm shift does not take place smoothly or instantaneously but is often characterized by an extended period during which adherents of the “old paradigm” continue to elaborate their theory with the increasingly convoluted solutions needed to account for perceived “anomalies” in their theory while proponents of the new paradigm are often marginalized or dis-

credited. This familiar overlap of old and new has persisted for the past 15 years; however, the Efficient Market Hypothesis does now seem ready to fall of its own weight. It is best understood as a “special case” within a larger general framework of nonlinear dynamical systems rather than the “general case” its proponents had originally described.

7. Per Bak, *How Nature Works: The Science of Self-Organized Criticality* (New York: Copernicus, 1996).

8. Although experiments using recursive difference equations applied to simple economic models of inventory accumulation do tend to confirm the theory, José A. Scheinkman and Michael Woodford, “Self-Organized Criticality and Economic Fluctuations,” *American Economic Review* 84, no. 2 (May 1994): 417–21.

9. Lui Lam, *Nonlinear Physics for Beginners: Fractals, Chaos, Solitons, Pattern Formation, Cellular Automata and Complex Systems* (Singapore: World Scientific Publishing, 1998).

10. Benoit B. Mandelbrot and Richard L. Hudson, *The (Mis)behavior of Markets: A Fractal View of Risk, Ruin, and Reward* (New York: Basic Books, 2004).

11. See Edgar E. Peters, *Chaos and Order in the Capital Markets: A New View of Cycles, Prices, and Market Volatility*, 2nd ed. (New York: John Wiley & Sons, Inc., 1996), *Fractal Market Analysis: Applying Chaos Theory to Investment and Economics* (New York: John Wiley & Sons, Inc., 1994), and the extensive references to additional research contained in both volumes.

12. “Growth of a Complex Market,” *New York Times*, 9 October 2008.

13. See Col Qiao Liang and Col Wang Xiangsui, *Unrestricted Warfare: China’s Master Plan to Destroy America* (Panama City: Pan American Publishing, 2002).

14. Since the defensive actions contemplated by this analysis would only occur during a time of financial warfare or extreme financial crisis, a delegation of emergency activation authority to the president seems appropriate. Clarifying amendments to the International Emergency Economic Powers Act of 1978 or the Trading with the Enemy Act would be an appropriate legislative vehicle to achieve this; however, the needed powers may already reside with the president, depending on the interpretation of those acts.

15. Barry Eichengreen, *Golden Fetters: The Gold Standard and the Great Depression, 1919–1939* (New York: Oxford University Press, 1996); and Ahamed, Liaquat, *Lords of Finance, The Bankers Who Broke the World* (New York: Penguin Press, 2009).

Security without the United States?

Europe's Perception of NATO

Klaus Naumann, General, Bundeswehr, Retired

FOR NEARLY 60 years, Europe has benefitted from America's willingness to view European security as part of its own and to extend the umbrella of "extended nuclear deterrence" over it. During the Cold War, it was the United States above all that prevented war in Europe, in particular in the form of a nuclear first strike, which the Soviet Union had planned. After the end of the Cold War, it was again the United States that restored peace in Europe when it decided, working within a NATO framework, to put an end to the Yugoslavian wars of secession and to lay the groundwork for the peaceful reordering of post-Soviet Europe by means of NATO expansion and the Partnership for Peace program.

This "Pax Americana" in Europe broke down after the United States began its war on terror following the attacks of 11 September 2001. This prompted anew the question that had already arisen once, at the end of the Cold War, about the future of NATO and about Europe's security without US involvement. This same question arises again with the arrival in office of the new Obama administration, for, in spite of the likely return to multilateral foreign and security policies, it cannot be ruled out that President Obama, like George W. Bush, will look upon European issues as largely settled and perceive his primary interests as lying in the Middle East and Asia. The question as to whether or not European security is possible without the United States is one that must be addressed on both sides of the Atlantic. An answer requires that we first examine the situation in

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Europe in 2009 so that we may then determine how Europe's security can be safeguarded before we can decide whether this can succeed without US involvement and what NATO's role in it will be.

The Situation

Even prior to the startling developments beginning in August of 2008—first in the Caucasus, then on the world's financial markets, and at year's end in the Middle East—the world was already in a process of ongoing transformation triggered by dramatic changes and with effects that touched on all aspects of life, crossing not just borders but whole continents. The more or less stable world order of the Cold War no longer exists, but many old conflicts remain unresolved. One need only consider the flare-up that occurred in August 2008 in Georgia, part of that powder keg known as the Caucasus; or the problems of the Middle East; or those at Europe's front door in the Balkans. While there is much talk of a multipolar world, no one has yet explained how to go about achieving stability within such an order. Still, there is one bit of good news: The chance of a major war in Europe, the battlefield of innumerable wars over the course of 300 years, can in general be ruled out.

Starting in October of 2008, however, the world now understands that, in addition to acute regional crises, global crises can develop with the suddenness of tsunamis. The global financial crisis brought the world to the edge of the abyss, and we are by no means out of danger yet. It is clearer now just how quickly we can lose control of events, with the result that crises in financial markets can turn into crises of state authority and democratic legitimacy. Sadly—and this is the bad, though not surprising, news—it is possible that there could be more crises of this dimension in the future, because the world faces still more global changes, often dramatic in kind.

To answer the question of whether Europe can provide for its own security without the aid of the United States, we must first take a look at long-term developments, for in facing current crises one can only turn to the means at hand, namely NATO and the European Union.

Four Long-Term Crises

We can discern four long-term developments that can perhaps lead to crises and conflict: demographic displacements, shortages of essential

resources, revolutionary advances in industrialization and technology, and climate change.

A dramatic and well-appreciated but politically neglected change can be found in the demographic shifts occurring globally. These will expose European societies to tremendous pressure. Europe's population is shrinking and growing increasingly older, so that by the year 2050 its people will have an average age of 50. Meanwhile, the North American population will increase while remaining at the average age of 37. The decline in Russia's population to perhaps less than 100 million will be even more dramatic and may accelerate through the spread of AIDS and tuberculosis. The roughly six million ethnic Russians now living in the sparsely populated but resource-rich parts of Siberia will look on helplessly as approximately four million illegal Chinese immigrants continue to increase in number.

India will soon be the most populated country in Asia and, at one and the same time, home to more academics than any other country but also to the greatest number of illiterates. China will face a disproportionate number of elderly and will struggle with the effects of the "one-child policy" while also trying to come to terms with more than 150 million jobless, 200 million migrant workers—some of whom were recently laid off—and unimaginable environmental degradation and rapidly increasing urbanization.

Only Africa (despite war and AIDS), the Arab world, and South America will see population growth occurring together with a decline in average age. This could produce waves of immigration that primarily impact Europe. These developments are no longer reversible. They will produce tensions worldwide, but in particular in Europe, where many European countries will be forced to open their borders to new immigrants to support their underfinanced social welfare systems.

The second development is the scarcity of essential resources. Bloody conflicts over raw materials that are by no means essential in nature yet which serve as indispensable means of profit maximization can produce strife like that in the Congo, where the rivalry between Tutsi and Hutu merely cloaks a struggle over "coltan" (columbite-tantalite) and similar raw materials. The competition for resources in increasingly shorter supply—foremost among them water, gas, and oil—will intensify, leading to more conflict, stemming at least in part from Europe's, India's, and China's needs for secure energy imports essential to their survival. Europe will not be able to meet its energy needs through renewables, even where

it has wisely retained nuclear power. And even if it were to put an end to the wasteful use of oil, Europe would still remain more dependent on foreign sources than the United States, where new technologies and the exploitation of untapped potential make for less vulnerability to extortion by foreign energy suppliers. Globally, the struggle for water will be the primary source of conflict in the future, since at present 40 percent of mankind gets its water from extraterritorial sources.

The third trend has to do with the need resulting from advancing technological change to move labor-intensive production and services to lower-cost countries outside the industrialized world. It will lead, on the one hand, to further stresses on labor markets and social welfare structures and, on the other, to increased competition for young, highly qualified workers. Europe, North America, and Japan will be able to maintain their position in the high-value markets for the time being, though only at the price of considerable changes in industrial structures and steadily rising qualification requirements demanded of their workforces. The unequal distribution of the world's riches, with all the potential for conflict it entails, also will not change, despite a possible threefold increase in the GDPs of both India and China.

Climate change and environmental stresses constitute the fourth trend that can also act as sources of crisis and conflict. One example can be found in Darfur, where climate change rather than ethnic or religious issues has likely led to what might be called the world's first climate war. And if the prognoses about global warming prove true, we are likely to see more conflicts of this sort. Other conflicts will occur in those places where environmental contamination has led to water shortages. As is often the case, the weak living in these places will turn to terrorism, and international organized crime, including piracy, will blossom. In addition, there will continue to be conflicts between states over such unresolved issues as the dispute between Russia and Norway over the oil-rich continental shelf off the coast of Spitsbergen or the question about how to administer new sea routes through a potentially ice-free Arctic Ocean.

These four phenomena will alter the internal makeup of most societies, though obviously to differing degrees, and will lead to various forms of antagonism up to and including armed conflict. They could even compel changes in the fundamental structures of government as it becomes clearer that problems can no longer be addressed within the narrow confines of individual ministries or departments—or even at the national level.

Increased international cooperation will be necessary. While the tendency of countries to act on their own continues to grow for the time being, the ability to shape events at that level is shrinking.

Europe will experience these changes firsthand—even more so than the other primary actors on the world stage such as the United States, Russia, China, India, or Japan—because it lies closer than any of them to the key region in world affairs for the foreseeable future: the greater Middle East, that region where all the previously mentioned trends come together and on which Europe is more dependent than any other of the world's major players. Conflicts in proximity to Europe are, therefore, practically unavoidable. They could arise from

- clashes over access to and possession of existential resources such as water, food, energy, and health care;
- migration triggered by the effects of climate change;
- traditional causes of conflict aggravated by the new sources of contention, such as unresolved territorial claims, membership in different ethnic or tribal groups, inequitable distribution of political power, or religious tensions; or
- crumbling state authority in a world in which nonstate actors gain increased access to instruments of power not subject to either supervision or control.

Newly burgeoning militant ideologies could aggravate these sources of conflict through the use of agitation spread by new global means of communication.

Future conflicts will often be characterized by simultaneous actions taken by both state and nonstate actors, with the latter increasingly assuming the full power potential of states. The states' monopoly on power will be shattered, and nonstate actors will be freer to act without regard to law or moral norms while states acting in their own defense will remain bound by those norms.

Many future conflicts will begin internally, at the local level. Some may initially be conventional wars, and most will be conducted “amongst the people.” Many of these conflicts will quickly take on regional or even global significance. Governments will be increasingly willing, even compelled, to act preventatively to contain these conflicts at a distance from their own

borders, while their publics will be ever less prepared to appreciate the need for or to lend their support to such actions for long periods of time.

The twenty-first century will be an unsettled century; one in which, in addition to the more familiar wars between states, there will also be new forms of violence such as cyber war and contests between transnational forces and traditional state authority. At the outset it clearly will prove a world lacking any sort of global order. This is due in part to the fact that the Pax Americana has lost much of its meaning in Europe and never took hold in the Middle East (though it still remains irreplaceable there). Only in the Pacific region does it retain its role as a central, stabilizing factor.

In searching for a new organizing principle, the world will only slowly begin to appreciate that no single state, not even the most powerful, can protect its people on its own. Everyone understands that neither military means alone nor the pacifistic rejection of those means can secure peace. The future belongs to international organizations, even though the earth's powerful find it difficult to allow the weaker to exercise influence in those fora or to make decisions in concert with them. On the other hand, the world's weak find it hard to surrender sovereignty as well.

There are two additional sources of danger that must be considered: nuclear proliferation and cyber operations. Between now and the year 2050, the world will experience a renaissance in nuclear power generation, with up to 1,400 new nuclear plants added to the grid, possessing the potential to produce nuclear weapons as a by-product. New initiatives toward a reduction in nuclear weapons are imperative but will only work if the United States takes the lead.

Another new threat, one that strengthens both terrorism and organized criminality, arises out of the increased use of cyber war by both state and nonstate actors. Cyber war brings with it a paradigm shift in strategy, with the emphasis moving away from the direct destruction of the opponent and toward the strategic, potentially preemptive immobilization of its sources of power. The developments here are breathtaking. In 2000, four gigabits-per-second (gbps) could be directed at immobilizing a system, but only nine years later, that figure has increased to 16 gbps. One should therefore not only examine closely the cyber attack on Estonia in 2007, but also stop to ponder the opportunities this development opens up to organized crime. With its growing "turnover" of \$2–3 billion (US) per year, organized crime can devote great sums to the use of the most up-to-date technologies.

All the various sources and forms of conflict must be countered with a suitable security architecture. But this can only be effective if those states that are part of it demonstrate both the will to act and the readiness to employ all the means at their disposal. Above all, however—and this is the decisive criterion for determining whether or not Europe can get by without the United States—future conflict management will require the capability to act globally.

Current Crises

The world's states, including Germany, must deal with existing crises, employing currently available means to do so. These cannot be effective, however, without the United States. For that reason, European security will continue to be dependent upon the United States over the short to middle term.

Many of today's conflicts demand action within Europe or at its peripheries. There are, for example, the issues still outstanding in the Balkans and in the Caucasus or the critical matters of the Middle East. Extension of diplomatic recognition by the United States and some EU members may have influenced Russia's decision with regard to the crisis in Georgia. And diplomatic recognition clearly was the cause of unrest in the Balkans, where many of those living in that artificial construct called "Bosnia-Herzegovina" now dream of independence, foremost among them those in the "Republic of Srpska." Not a few of them would be ready to take up arms again on behalf of the cause of independence. Europe must therefore remain engaged in the Balkans and search for ways to bring about a lasting resolution to the conflict through the integration of Serbia into the European Union.

However, the most pressing matter has to do with stability in the greater Middle East, the key region in world affairs for the foreseeable future. None of the questions facing us there can be viewed in isolation.

Perhaps the easiest to deal with is Iraq, where it appears that something like partial, albeit fragile, stability has been achieved. Even so, the period since 2003 has seen a fundamental shift in power relationships in the region. Alongside traditional states, a complex, little-understood actor has entered the scene: political Islam. Meanwhile, the political center of the region now lies in the Persian Gulf with its rival parties, Saudi Arabia and Iran.

Proposals made with respect to the region are only viable when backed by the United States. This applies in particular to Iran. There is still a

chance—perhaps the last—of reaching a peaceful resolution to the conflict over the Iranian nuclear program. Contrary to all its claims, Iran is undoubtedly pursuing a nuclear weapons program. The possession of nuclear weapons is by no means a goal pursued only by the current Iranian president. It has been a goal of Iran's leaders since the time of the shah. Iran might already be in a position to cross the threshold to construction of a nuclear weapon. The enrichment of existing stockpiles of reactor fuel into weapons-grade HEU (highly enriched uranium) could soon begin. And from that point, it is only a matter of months until Iran is in possession of an atomic weapon, even if at first only a rather primitive one. Iran already has the necessary delivery vehicle, capable of reaching Israel and even parts of Eastern Europe.

This has set off alarms in Israel, where even a single bomb poses an existential threat. Given the threats of annihilation coming from President Ahmadinejad, no Israeli government will stand idly by in light of these developments. Only the United States can prevent Israel from taking unilateral action. Efforts to bring the situation under control can only succeed, however, if Russia and China abandon their occasional support for Iran and instead act to block Iran's efforts by giving their full backing to the demands of the UN Security Council, and if the UN passes new, more stringent sanctions, implemented by all parties. If the United States were then to present Iran with a new package of security guarantees, along with political and economic incentives and a comprehensive set of proposals for Middle East peace, there might be a chance for a face-saving resolution of the issue. This has been made much more difficult, however, by the recent violent conflict in Gaza, where neither Hamas nor its financial backers in Tehran appear to have an interest in a lasting settlement to the conflict. Terrorist organizations like Hamas and Hezbollah thrive on conflict and have no scruples about using those subject to their authority as hostages. Those who protest against Israel, though well-intentioned, unknowingly make themselves accomplices to the radical elements in the Islamic world, just as do those segments of the media that stir up fears of a conflagration in the Near East.

This crisis at Europe's doorstep demonstrates that only the United States, not Europe, can achieve a lasting peace settlement. The issue is urgent, for it is clear that the Israelis will not stand idly by until Iran has a nuclear weapon with which it can realize its threats. The crisis has a global dimension as well: If it is not possible to halt Iran at the threshold

of becoming a virtual nuclear power, then the relatively stable world held in place by the nuclear nonproliferation accord, with its five declared and three undeclared nuclear states, could be at an end. A consequence of Iran obtaining a nuclear bomb could be the nuclear arming of states like Saudi Arabia, Syria, Egypt, and perhaps Turkey as well. The result would be a highly unstable world in which the consequences following from the construction of 1,400 new nuclear plants by 2050 could no longer be contained, a world in which one could no longer completely rule out the use of nuclear weapons by one of what might by then be an abundance of nuclear weapon states. This is the global dimension of the Iranian crisis and demonstrates that a solution must take precedence over everyday business interests.

Afghanistan must also be addressed without delay. While the struggle for control continues, hunger and violence are common, including in the north of the country. After six years of selective improvements across the country but with no clear progress toward betterment of their living conditions, the Afghan people are dissatisfied. They increasingly see foreigners as occupiers. The Taliban, of whom presumably less than 10 percent are dedicated fanatics, enjoy growing popularity. And the instability in neighboring Pakistan provides them with an ideal sanctuary in the tribal areas along the border. Simply sending in more NATO troops cannot be the solution. The problem is political in nature. The Afghans see a “strong” central government as something foreign, not their own, imposed on them from the outside. And the unchecked vicious circle made up of the drug trade, corruption, and arms dealing generates insecurity, weakens a central government plagued by corruption, drives the country ever more into the hands of rival warlords, and provides the Taliban with the money to finance its followers.

Current strategy must therefore be reviewed. A viable strategy should build on past successes and, coupled with a counterinsurgency strategy, should be oriented fundamentally around reconstruction. Its goal would be to work jointly with moderate elements to establish an Afghan order based on strengthened security organs (military and police) that could break the vicious cycle of criminality made up of the drug trade, corruption, and the arming of warlords. This could then help produce a widening zone of stability in which the country’s security could gradually be turned over to the Afghans themselves while simultaneously pursuing the reconstruction efforts in the country. Discussion about networked security

will not suffice. We must work together with our allies, even though this may pose certain risks. There can be no separate solutions for different parts of Afghanistan—one for the north of the country and another for the south. Afghanistan will be won or lost as a whole, but it must not be lost, since that would only open it up as a new breeding ground for terrorism. Moreover, Afghanistan has become a regional problem that will require the involvement of Pakistan, Iran, and India. Europe also must play a part—especially as we recall that it was Germany which, in 2002, asked that Afghanistan be made a NATO operation.

Afghanistan can still become a success. But attempting to “stay the course” there would only pave the way to ruin—not to military defeat, but to a political defeat for the Western powers, which would produce a destabilizing influence far beyond the region.

If it were possible to bring about a settlement in Iran and Afghanistan, and if the current shaky peace were to hold in Iraq, then it might be possible to shape a peaceful resolution to the conflict between Israel and the Palestinians. Achieving this has been made more difficult by the recent conflict in Gaza, where Hamas used the power of images to obscure the fact that it was the primary source of the troubles there. Israel may have successfully restored its deterrent capacity, but the fundamentalists in the Arab world emerged strengthened.

A resolution to the conflict will require American leadership and European involvement. Above all it will require prompt action, since any solution will surely occupy the first full term of the new president—and because Israel is running out of time demographically. If the Iran crisis were successfully diffused, then the United States could bring into the process the new government of Israel as well as Saudi Arabia. Syria would be ready to negotiate because without Iran it would need compensation and because Hezbollah would be so weakened without Iranian backing that Syria could be more flexible in Lebanon. Through a settlement of the Iran question, Hamas, too, would lose its sponsors. Then the United States could put pressure on Israel and Syria and encourage the Saudis to get the Palestinians to accommodate. Coordinated pressure from Washington and Riyadh could lead to the first tangible steps toward a two-state solution and real hope for peace between Israel and the new Palestinian state.

But, in addition to immediate crises, one must also examine the short- and midterm developments in Asia as well as relations with Russia to determine whether security for Europe is possible without the aid of the

United States. There is no need for any sort of short-term action in Asia, the sole area of the world where the Pax Americana still serves as guarantor of relative stability. Negotiations continue with respect to the most threatening issue there, North Korea. There appears to be little likelihood of conflict over Taiwan for the foreseeable future, as the two sides continue talking. China, which over the midterm will possess no appreciable means of power projection, will seek to keep the United States engaged in the region to gain the political breathing room it needs to deal with its internal problems while pursuing economic expansion. China needs free access to the American market. Economically, China and the United States are in a symbiotic relationship, and for that reason China has no choice but to seek cooperation over the short to middle term. China needs the United States in the Pacific to enforce order; only then can it realize its long-term interests.

Relations with Russia are more troubled. There is no danger of armed conflict with NATO; Russia is militarily too weak for that. It also poses no threat to any of the individual NATO states so long as NATO remains united and retains a credible capability for collective defense. This, however, is only possible together with the United States. The autonomous European defense of EU territory is not doable over either the short or the long term.

The problem with Russia is psychological in nature. The actions of Putin's Russia flow from a feeling of wounded pride. Russia would like to be the world's number two power, and its leaders believe they can act from a position of strength. However, Russia is actually quite weak because

- it can only export weapons and raw materials (the latter only beyond 2011) if the West helps modernize its production and transport infrastructures;
- it finds itself in a significant though unacknowledged economic crisis that could be worsened by falling oil prices;
- military reform has failed; and
- it is facing a demographic catastrophe that will result in even fewer Russians living on the country's most vulnerable borders.

Yet Moscow believes itself to be strong, which explains the somewhat ill-considered actions taken since the summer of 2008—its disproportionate use

of force in Georgia, its recognition of the breakaway provinces, Medvedev's imprudent announcement regarding the stationing of new missiles in Kaliningrad coinciding with the US elections, and the renewed threats to cut off natural gas supplies in January 2009—which were clearly an attempt to hinder the Ukraine in its turn toward the West and to demonstrate to Europe that it had best back away from EU and NATO expansion. One of the abiding problems of European security lies in making sure that the American commitment there remains credible while also seeking a cooperative relationship with Russia without conceding to it a *droit de regard*. Europe can play a helpful role in this respect, though not as go-between; for that, it is not powerful enough and is too divided. But Europe could make clear to the new US president that a great deal of patience is required in dealing with Russia and that one must be guided by the knowledge that the weaker party in any exchange cannot be expected to accept one-sided decisions which it subjectively perceives as dishonorable and that one must instead actively engage with it and offer a helping hand in pursuit of a shared vision.

So much for existing crises. One might add to the list the ongoing wars in Africa and the tensions in South America, but the question at hand has to do with European security without the United States, and neither Africa nor South America poses a direct threat to Europe, even though the economic consequences of the continuing conflicts there could be serious.

European Security without the United States?

Europe is politically disunited and deeply divided over security policy. But while the European Union has been plunged into a serious crisis by the vote of four million Irish against the proposed EU constitution, the EU still possesses one great advantage: It has at its disposal all the political means—the full spectrum of instruments—needed for an effective security policy. And yet it suffers from two serious deficiencies:

- It lacks the will to act quickly, decisively, and firmly when necessary.
- Its military capabilities are inadequate. They are insufficient to protect the EU zone from current threats, let alone meaningfully project power beyond its borders. However, this latter capability is precisely what Europe needs, because the mid- to longer-term threats require a global reach, not merely the capability to respond retroactively to

threats but rather the ability to actively engage with threats wherever they arise.

No one seriously doubts that Europe cannot provide for its own security. Placing hopes in the United Nations or the Organization for Security and Co-operation in Europe (OCSE) is illusory. The tried-and-true Cold War-era method of “outsourcing” security to the United States is no longer viable, not least because America’s role in the world has changed. Since 2001, the United States has lost a great deal of its former credibility. Plus, the United States sees itself in a protracted war against global terrorism, which it is determined to win.

For the time being, then, Europe is left with no better option than to seek security in NATO. However, for that to work, the alliance must be fundamentally remodeled. Through extensive cooperation with the EU, the alliance can be put in a position to shape networked security. Using this structure, Europe could develop over the long term its own capabilities for limited operations outside Europe, whether carried out within the NATO framework or as independent EU operations. This also accords with the commitments made in the Prague Capability Commitment, the Headline Force Goals 2010, and the European Capability Action Plan, but which thus far have been given nothing more than lip service. Europe must also alter its perception of NATO. NATO will remain the guarantor for the collective defense of alliance territory, but it cannot be satisfied with that. On the other hand, the alliance should not be made into a global actor. NATO must be refashioned in accordance with a duly expanded concept of security. For that it needs a new “grand strategy,” one that incorporates all the instruments of crisis management including, above all, nonmilitary components, and which seeks cooperation with other organizations, especially the EU, in directing all of its efforts toward the prevention of armed conflict. The means appropriate to this strategy must then be established. The goal here should be to expend available funding for the armed forces in such a way that the NATO states can defend their interests and their populations through a combination of active and reactive defense and yet also be in a position to act wherever necessary within the framework of the UN and NATO to defend against threats outside the NATO area.

Most European armed forces, including existing defense projects, must be reexamined, since many of them—born in the Cold War—strain public finances while hindering needed modernization in key capabilities such as information predominance. Europeans would be well advised to work in

cooperation with the United States to develop, acquire, and jointly operate a series of core capabilities, so-called strategic enablers. These include satellites for reconnaissance, navigation, and telecommunication; unmanned reconnaissance aircraft; unmanned armed drones; missile defense systems; electronic war-fighting capacities; and truly strategic air- and sea-transport capabilities. If Europe had an efficient arms industry of its own (which does not necessarily imply independent European production where off-the-shelf equipment can be had more cheaply), then it would be possible to develop a European military capacity that could place Europe in a position to engage in future joint operations together with the Americans and to a limited degree to operate independently outside of Europe, assuming that it is prepared to make the requisite political commitments. If Europe were to take the necessary steps to assemble a European police force, a European catastrophe relief corps, and an EU development assistance corps, then it would possess the capacities for limited global action. Europe would still not be able to stand toe-to-toe with the United States, but it would be a much more sought-after security partner, preventing others from making decisions without first getting Europe's views. This should be Europe's goal. Moreover, this would be the right thing to do from America's perspective as well, because a stable Europe closely allied with the United States would expand the power of the United States to act.

Conclusion

For the time being there can be no security for Europe without the United States. As the expression of the US treaty obligation to, in cooperation with the Europeans, provide for the security of the area between Vancouver and Brest-Litovsk, NATO must remain intact and be further developed. It is necessary to preserve the tried and tested—like collective defense and the real glue of the alliance: the equitable distribution of risks and burdens—while working to fashion the alliance anew.

What is needed is a vision of an alliance based on shared values and convictions between the states of Europe and of North America in which all are prepared to work together to protect themselves against all nature of dangers without seeking to impose on anyone their social order or to spread their religion. It should be an alliance that seeks cooperation with other countries and religions and that works together with its partners and others to build, in cooperation with Russia, a zone of security extending

from Finland to Alaska, which may then serve as the foundation for a future zone of security that stretches from Vancouver to Vladivostok.

This would be a sound basis for comprehensive collaboration between Europe and the United States in confronting the global problems of our time: the effort to reverse global warming; the campaign against hunger and lack of water; and the struggle against disease and pandemics. **ISSQ**

Shared Challenges—Joint Solutions?

The United States and Europe Face New Global Security Risks—High Times for Grand Strategy

Ralph Rotte and Christoph Schwarz

How Much “Change” can be Expected?

In his critical examination of the history of American foreign policy, past and present, Walter Russell Mead observes that the grand strategy of the United States cannot be found in either strategic documents or speeches by senior officials. This is because such statements merely articulate goals and aspirations; they do not provide evidence of how the United States would actually act in any particular situation. Examining past behavior is, in his view, better suited for shedding light on the United States' overall strategy. Given the multiple factors influencing it, predictions about the future direction of US foreign policy are subject to great uncertainty and should therefore be viewed with caution.¹ One may well take a critical view of the demanding standard that Mead implies should be applied to grand strategy. Other authors single out the course-setting function as the primary purpose of grand strategy: that is, to integrate and coordinate the various means for achieving security in accordance with the foreign and security policy objectives of the state or alliance.²

Despite these differing opinions about the function and purpose of grand strategy, Mead's observation offers a useful starting point for this

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article, which is concerned with the prospects for coordinated transatlantic efforts in dealing with the new and varied security challenges as well as threats that exist at the end of the first decade of the twenty-first century. First of all, Mead's reference to the complexity involved in the process of shaping strategy is useful in qualifying the widespread "Obamamania"³ recently observed in Europe by pointing out that, in spite of his broad authority in foreign policy, the 44th president of the United States can by no means act autonomously in pursuit of his agenda. Much to the contrary, he is part of a complex network of interests and relationships vested in Congress, the media, lobbies, and the US political culture in general. With this in mind, one can only wait and see how Barack Obama positions himself with respect to various issues and, above all, whether he will (or can) stick to the positions he enumerated during his campaign.⁴ This same situation applies equally, if not more so, to European governments.

Second, if observation of the past offers insight into current and future American behavior abroad, as Mead suggests, then it is certainly justified to expect a considerable degree of continuity with respect to such determining factors as values, self-perception, and interests in this policy field.⁵ These elements of continuity, often insufficiently appreciated in Europe, might temper the euphoria that accompanied calls for "change." Rather than a fundamental departure (and rejection) of the policies of the Bush administration, it can be expected that under President Obama there will be "change" that is gradual in nature. As a result, one may presume that the underlying sources of conflict that exist in transatlantic relations have by no means disappeared following Obama's taking office. Rather, the opposite may be the case. Even now, new potential conflicts are about to emerge.⁶

Third, one must bear in mind the importance of situational influences as determining factors in shaping actions. These can have an influence independent of any prior positions an administration may have held and result in the complete revision or at least a gradual shift of the center of gravity in any number of policy areas. George W. Bush's role as a war president would be unthinkable without the events of 11 September 2001. Without doubt, nothing prior to the devastating attacks of 9/11 offered any indication that the global war on terror would be the defining element of both his terms in office.

Accordingly, it seems reasonable to take a skeptical attitude with respect to any expectation of a reversal in American foreign policy under Obama vis-à-vis the course taken by his predecessor. At the same time,

one can already clearly discern a gradual shift in the policy statements of the former candidate.⁷ These changes concern precisely those new global security risks that the European Union placed at the center of its *European Security Strategy (ESS)* released in 2003: transnational terrorism, the threat to transatlantic security resulting from the ongoing proliferation of weapons of mass destruction, and the dangers emanating from “failed states.”⁸ The latter are consistently present in discussions about the most effective means for securing stability in Iraq. These three areas, which represent only a sample of potential threats included in a comprehensive understanding of security, will be examined more closely from a comparative perspective in the following analysis.

It should be emphasized that opinions about either the chances for co-operation or the potential for conflict that exist between the United States and Europe offer no details about the effectiveness of any efforts made to tackle the threats faced. In this regard, one must refer in particular to the Bush administration’s much lamented strategic deficiencies, or, more precisely, the failure to connect (political) purpose with (military, etc.) means, in the Clausewitzian sense.⁹ However, the same charge can be directed equally against the EU and its member states. They, too, applied an ineffectual approach to the use of their foreign- and security-policy apparatuses.¹⁰ Consequently, it is not only a matter of fundamental strategic consensus (though that is clearly of crucial importance) but rather of the effective use of limited resources—choosing the correct instruments as well as perhaps the proper division of labor needed to achieve commonly held goals.¹¹ An evaluation of the potential for cooperation between the United States and Europe focused on this issue could form the basis for a dialogue between the two sides aimed at identifying and putting to best possible use the existing capabilities available to both sides.

New Security Threats in International Affairs and the Strategic Responses by the United States and Europe

By now it is commonly understood that the essential nature of international threats drastically changed with the end of the bipolar order in 1989–90. In the period that followed, threat perception was no longer dominated by the danger of a conflict between states in antagonistic alliance systems possibly involving the use of nuclear weapons. Additionally, now there were new challenges that contained a unique set of security risks

as well as possible new causes of conflict and war.¹² A broadened interpretation of the concept of security takes this development into account by integrating a number of nonmilitary factors as well as new forms of military threats that exist alongside “classic” state-centric military scenarios. Contrary to the widespread assumption that traditional threats such as, for example, state-to-state conflict have ceased to play a significant role in world affairs,¹³ precisely the opposite has actually proven to be the case during the first decade of the twenty-first century. One can say without hesitation, therefore, that both “classic” and novel threats to national and international security currently exist side by side.

Though the advent of a comprehensive approach to security coincided with the end of the Cold War, it is problematic to characterize as “new” those security-related developments that have since gained greater significance. The threats themselves are by no means new; the phenomenon of terrorism has been with us since ancient times.¹⁴ What has actually changed is, on the one hand, the quality of the threat—the ability, for example, of terrorists to stage nearly simultaneous attacks that produce mass casualties, as was clearly demonstrated on 9/11. This results, on the other hand, in a shift in emphasis among the priorities of national and international security policy so that, as a consequence of 9/11, inter-/transnational terrorism is now identified as one of the central if not foremost threats to security.¹⁵ And, finally, the often observed interdependencies between organized crime and terrorism are one of the central features of current developments.

The latter aspect, in particular, points to a problem that has so far received too little consideration in the assessment of a broadened concept of security. The issue here has to do with “operationalization,” the difficulty of adjusting the strategic orientation of national and international foreign and security policies to fit the kinds of complex threats we confront. Even if the relevant documents published by states or international alliances (e.g., NATO) take into account the changing threats, as a rule they still fail to connect this changed assessment and practical operative-tactical actions to be taken.¹⁶ In other words, the substantially more complex threats evolving in the end of the East-West conflict underscores the need for the increased application of the concept of grand strategy—that is to say, a foreign policy that subordinates the use of the whole range of available means to a clearly defined and targeted goal.

This is what lends validity to Walter Russell Mead's criticism of American foreign policy prior to 11 September 2001, a decade which he labels unequivocally as "the lost years."¹⁷ Joseph Nye's observation that the United States failed to understand how to apply both hard and soft power in a balanced fashion is also relevant for the period after the attacks on New York and Washington. Barack Obama in his outright criticism of the counterterrorism policy of his predecessor makes this evidently clear, writing: "The Bush Administration responded to the unconventional attacks of 9/11 with conventional thinking of the past, largely viewing problems as state-based and principally amenable to military solutions."¹⁸ Obama himself, as well as the Europeans, will be judged by the degree to which they are able to make a sufficient analysis of the threats we face, starting with a justified criticism of the Bush administration policies, and based on that, whether they then reach the right conclusions about which foreign and security policies should be applied in dealing with the new challenges arising in the years to come.

Using the three areas previously mentioned—the threats posed by international terrorism, those flowing from failed states, and the dangers stemming from the proliferation of weapons of mass destruction—we can explore the potential for cooperation as well as conflict in transatlantic relations in the years ahead. By connecting the relevant security policy area with a case study in point, we can more easily identify what actions should be taken. Afghanistan, for example, undoubtedly represents the central front in the clash with transnational terrorism. The partial and imperfect stabilization achieved in Iraq serves as ample evidence for the dangers resulting from a decline (or a lasting fragility) in state authority. And, the ongoing effort by the Iranian regime to gain possession of nuclear weapons in the face of opposition by the international community vividly demonstrates the necessity of an effective nonproliferation policy.

Afghanistan and the Clash with Transnational Terrorism

The collapse of New York City's twin towers marked the defining moment for both of George W. Bush's terms in office.¹⁹ From that point on, not only did the struggle against transnational terrorism stand indisputably at the center of American foreign and security policy, as a consequence of the attacks of 9/11 there followed "a fundamental reorientation of foreign policy,"²⁰ or, in the opinion of Ivo Daalder and James Lindsey,

what might be called a “Bush revolution”²¹ that broke with the traditional foundations of American engagement in the world. The worldwide solidarity initially directed toward the United States gave way to an increasing degree of skepticism that eventually developed into determined opposition on the part of the Paris-Berlin-Moscow-Beijing axis during the run-up to the Iraq War in 2003. The source and object of the former did not, however, lie primarily with the, by then, obvious defects in the concept of a global war on terror.²² Rather, it was differing visions about how to shape international order that played a primary role in bringing about the conflict—together with feeling on the part of the above-mentioned states that they were being marginalized by the “superpower” United States. The critics that outright rejected the link made between the war on international terrorism and regime change in Baghdad—itself based on a non-existent connection between Saddam Hussein and the terror network of Osama bin Laden—were undoubtedly right. At the same time, one must also point out that “old Europe” did not itself engage to a significant degree in a needed discussion of strategic issues. This applied equally to the transatlantic debate, the discussion going on within the EU and, finally, internal disputes in each of the countries named above.²³

To date, the desperately needed transatlantic debate on how to wage the campaign against transnational terrorism has not yet been started. This is all the more surprising given the statements made in all relevant documents that have declared terrorism as one of if not *the* central security challenges of our times. Furthermore, Europeans for years have made considerable efforts, in terms of both materiel and personnel resources, to combat terrorism—and at substantial costs, not least in terms of their own military losses. At the heart of the long-overdue strategic debate should be the questions regarding the relationship of military to nonmilitary means, the precise nature of the political goals to be pursued, and finally, who exactly our enemies are. The Bush administration demonstrated serious shortcomings in all these areas. First, war was declared on the phenomenon of terrorism in general rather than on one or more specific terrorist organizations—which invariably made it difficult to determine what would define victory.²⁴ Furthermore, the American government also failed in its attempt to apply a targeted and diversified use of available means in combating terrorism—not least because of its decision to open a “second front” in Iraq, which, contrary to the assertion by the president and his advisors, became a battlefield in the fight against international terrorism only *after*

the intervention by the “coalition of the willing.” These miscalculations and lapses are particularly inexcusable given that the central purpose of strategic action is to achieve a balance between the purpose pursued and the resources at one’s disposal.

For the Europeans, the situation was precisely the reverse. Although their nonmilitary capabilities and their awareness of the need for efforts that integrate all available means are both greater than in the United States in recent years, the ability of European armed forces to project power still leaves much to be desired. This fact has recently been recognized even by the European Parliament in its resolution on *European Security Strategy (ESS)*.²⁵ Especially serious is the gap between threat assessment and the means available to respond to the challenges identified that becomes apparent when reading the *ESS*. A coherent analysis of the external environment neither establishes criteria that have to be met before a decision to intervene is taken nor does it say against whom or where the intervention is to be directed. Finally, there is a grave need for a concise definition of interests to properly measure success or failure of any intervention—something one also searches for in vain in the *ESS*.²⁶ In sum, both Europe and the United States evince similar shortcomings with respect to the linkages between ends and means. With respect to the United States, a glance at the national security strategies published by the Bush administration gives ample evidence of these shortcomings.²⁷

With Obama’s taking office there appears at first glance to be a basis for a convergence with respect to strategy and, especially, the tactics to be employed in combating international terrorism. The new president sees Afghanistan and Pakistan as the central theaters of operation in this conflict,²⁸ an assessment shared by Europeans. Obama also appreciates the need to develop a strategy that makes use of a comprehensive set of instruments in dealing with the challenges to be overcome.²⁹ This assessment has already been echoed in statements from the single official left over from the Bush administration. In a notable article, Defense Secretary Robert Gates emphasized that “what the military calls kinetic operations should be subordinated to measures aimed at promoting better governance, economic programs that spur development and efforts to address the grievances among the discontented, from whom the terrorists recruit.”³⁰ In addition to the increased emphasis given to nonmilitary means, the new administration is planning to increase troop levels in Afghanistan by transferring elements from Iraq; a stepped-up program in forging Afghan

military and police forces; as well as putting pressure on Pakistan to offer greater support to the counterterrorism campaign.³¹

While these measures find strong support among Europeans, the United States' repeated demand—reiterated by Vice President Biden during the Munich Security Conference in early February 2009—that the Europeans drop the special exemptions and national caveats put in place by several NATO states carries with it ample potential for conflict. It is this issue which will reveal whether or not the Europeans, above all Germany, are both willing and able to overcome the taboo placed on discussions about the use of military means to achieve political ends and whether they are thereby ready to engage in a true strategic discussion. The likelihood for this to happen must be viewed with skepticism in light of the profound discrepancies in threat perception during the run-up to the Iraq War in 2003 and, more important, the considerable differences with respect to the willingness of the European and American publics to confront rising threats by preventive action in the places where they originate. The post-heroic impulse appears to be stronger in Europe than in the United States, despite claims to the contrary.³² Should this assessment prove to be correct, "old Europe" would in fact be at risk of being demoted to a second-rate partner of the United States with respect to international conflict resolution and crises management for the foreseeable future. Paradoxically, this could mean that the fears that were already in circulation during the Bush presidency could turn into bitter reality during the much anticipated presidency of Barack Obama.

Iraq and the Dangers Associated with "Failed States"

One of the core elements of the national security strategy of Pres. George W. Bush lay in the worldwide expansion of the "infrastructure of democracy."³³ With respect to the current state of affairs in Iraq and Afghanistan, at least, it is possible to say that exporting democracy by means of a militarily imposed regime change so far has failed to produce the desired results. At least this assessment holds true if one assumes that democratization implies more than merely holding national elections. Moreover, the war against Iraq served more than any other recent event to undermine America's standing in the world. As for the relative balance of power in the region, it also decidedly strengthened Iran,³⁴ drew away resources needed in the actual fight against transnational terrorism, and led to a

pronounced dispute with America's traditional allies across the Atlantic. This is just part of the collateral damage associated with George W. Bush's exploitation of the "moment of opportunity" created by 9/11.³⁵ Particularly striking is that it was the overthrow of the despotic regime of Saddam Hussein and the subsequent catastrophic mismanagement of Iraq's reconstruction by the United States that has left Iraq in danger of becoming yet another example of a failed state.³⁶ Particularly if one supports the idea of a "positive domino effect" in the Greater Middle East that should supposedly have followed Iraq's democratization, then the course of events in Mesopotamia (at least up until the temporary stabilization achieved through the massive increase in troop levels in 2007 and the switch in sides by local clan chiefs) gives ample evidence of the incompetence on the part of the United States.

In Barack Obama, Europeans find themselves face to face with a president who, like most "old Europeans," voted against the Iraq war from the start. Therefore, it does not come as a surprise that one of his stated goals is to end this war.³⁷ The central element of plans directed towards that goal is the gradual redeployment of American forces, primarily to Afghanistan. Thereby Iraqi officials as well as the various ethnic groups within Iraq shall be put under pressure to establish a sustainable political order. According to current planning, the troop transfer should be completed by 2010, leaving only a few units stationed in Iraq with the task of combating the remaining terrorist elements.³⁸

Even though the argument that there can be no purely military solution to the situation in Iraq is plausible, the approach briefly outlined above places the stability of Iraq at serious risk once the American military presence comes to an end. It is true that Obama has retained the option of (re-)adjusting troop levels to bring them in line with any deterioration of the situation on the ground in Iraq. As Toby Dodge has pointed out, this reservation is based first and foremost in a particular understanding of American interests and not on Iraqi stability.³⁹ Therefore, it is still possible that Iraq could revert into a new wave of ethnic violence producing a failed state that lacks both a central authority and, as a consequence, governmental control in many parts of the country.

In light of possible developments such as these, European silence with respect to this issue seems rather surprising, especially if one considers that failed states, together with terrorism and the proliferation of weapons of mass destruction are included in the *ESS* as among the foremost of the new

threats we face. The *ESS* refers explicitly to the “very serious threat”⁴⁰ posed to Europe through the linkage of terrorism, the accessibility of weapons of mass destruction, and failed states. The *Report on the Implementation of the European Security Strategy* also emphasizes the dangers resulting from fragile states.⁴¹ One is forced to ask, therefore, why Iraq is still considered to be a purely American (and perhaps British) problem when all of Europe could be equally affected by the negative consequences of a failed reconstruction effort. Admittedly, the EU has joined in to a degree, for example in the reconstruction mission organized within the framework of EUJUST LEX (EU Integrated Rule of Law Mission for Iraq). But this is hardly a sufficient effort to ensure working state structures in Iraq in the future.

Limited resources and the potential difficulty of justifying increased involvement in Iraq in the wake of opposition to the actions of the previous US administration are certainly important factors in explaining the reluctant stand taken by some European governments. At the same time, the fact that these countries are not even willing to consider the possibility of additional efforts highlights an inadequate understanding of the truly strategic dimensions of the problems at hand. Although the United States and its coalition partners bear the responsibility for the current instability and resulting dangers, the consequences will be borne by the guilty and blameless alike. As a result, both Americans and Europeans should put their capabilities to work in a joint effort to defend against threats that both face. According to some commentators, European capabilities might be applied with benefit even in Iraq. In addition to well-developed civilian capabilities, the mere participation by the European Union in the reconstruction effort could lend that enterprise greater legitimacy—and thereby present Europe with the opportunity of exercising increased influence on US decisions.⁴² Especially in light of the uncertain chances for success of America’s current plans, it is strongly recommended that the Europeans try to enter into a truly strategic dialogue with Washington—even, if need be, through participation in a project that they originally condemned.

Iran and the Future of Nonproliferation

With respect to the future stabilization efforts in Afghanistan there certainly is a latent potential for conflict between Europe and the United States. At the same time, closer cooperation between the transatlantic allies toward the common goal of achieving a lasting stabilization of Iraq is

unlikely any time soon. In light of these rather sobering findings is there potential for cooperation or even true partnership with respect to nuclear arms control and the prevention of an ever growing proliferation of nuclear weapons and delivery systems? There hardly is a concept that more forcefully demonstrates the continuing relevance of nuclear weapon systems as instruments of national defense as well as the importance nuclear arms control and disarmament than that of the “Second Nuclear Age.”⁴³ Contrary to the widespread hopes expressed at the end of the Cold War, nuclear weapons have by no means become obsolete. The slow but steady increase in the number of nuclear-armed states and the associated increased risk of proliferation (which also opens up the possibility of nuclear weapons getting into the hands of terrorists) along with the slow drawdown of existing arsenals make the problem of nonproliferation more acute than ever.⁴⁴ Iran’s determination to join the club of nuclear powers is currently at the center of the international security agenda.

As has been the case with the whole of George W. Bush’s foreign policy, most German commentators offered harsh criticisms of the previous US administration’s policy on this issue as well. Harald Müller rejects American efforts aimed at maintaining a “full spectrum dominance” as an “American mania for superiority.”⁴⁵ In his brief review of the Bush administration’s foreign policy, Michael Staack also offers a stinging criticism when he writes that “Bush pursued comprehensive, and especially nuclear, superiority as the foundation for a unipolar US power base; he withdrew from treaties that posed an obstacle to this goal and sought to apply all means to prevent the proliferation of weapons of mass destruction.”⁴⁶ However justified any criticism of the unilateral withdrawal from the ABM treaty or of the double standard applied to the interpretation of the nuclear nonproliferation treaty may be, it at least partially obstructs the appreciation of noteworthy elements of continuity present in American nuclear strategy, in particular the high value of nuclear weapons during the period following the watershed events of 1989–90. Moreover, the discussion over American plans to establish a missile defense shield in Europe are marked by a remarkable asymmetry that ascribes Russian objections to such a system, not to sheer power politics on Moscow’s part, but instead to the removal of the prior deterrent.⁴⁷

From a strategic point of view, American policy directed towards containing the proliferation of nuclear weapon systems clearly did not pay off so far. Even if one argues that the forceful demonstration of America’s

readiness to intervene militarily—as proven by the Iraq war of 2003—played a role in Libya's decision to abandon its nuclear program, a different picture emerges with regard to North Korea and Iran. Here the message seemed to be: Get your hands on nuclear weapons as quickly as possible while the United States is occupied elsewhere. The war in Iraq proved a detriment to the goal of forestalling a nuclear-armed Iran. A sustainable resolution to the situation in Mesopotamia will not be possible without consent by Iraq's neighbor to the east. The leadership in Tehran will therefore seek to gain concessions in favor of its nuclear program in return for its willingness to cooperate on matters relating to Iraq.⁴⁸

Comparing the positions of President Obama and his transatlantic allies, it is evident that among the cases considered in this article the degree of agreement and, consequently, the likelihood of cooperation loom largest in the fields of arms control and nonproliferation policies. Obama's overall plans are very ambitious indeed; securing all nuclear materials currently in circulation within four years as well as turning the whole world into a nuclear-free zone constitute a set of goals that could not be set any higher. Even unequivocal advocates of the complete elimination of such weapon systems, like Harald Müller, emphasize the lengthy period of time required for such a project, extending well beyond the two terms potentially available to President Obama.⁴⁹ Yet, the Europeans will note with satisfaction the intention of the new American administration to underscore the importance of the nonproliferation treaty. Beyond the field of arms control, this aim gives rise to the hope that the current American administration will generally seek to strengthen the standing of international law and international institutions.

Along with agreement on both sides of the Atlantic on the fundamental goals of arms control policy (even though the final position of the European nuclear powers, in particular that of France, with respect to complete nuclear disarmament has yet to be ascertained), there is also a high degree of agreement with respect to Iran. Against the backdrop of Tehran's continuing refusal to restrict its efforts in the use of nuclear energy to nonmilitary purposes, European governments have threatened tighter sanctions while remaining committed to a diplomatic solution. Even though the current situation in general represents an “intolerable state of affairs,” Europeans have not yet openly threatened military action.⁵⁰ The American government, on the other hand, has not yet taken military action off the table to prevent Iran from obtaining nuclear weapons. Indeed, President

Obama is able to pursue a diplomatic solution while keeping the threat of military action comparatively small. The reason for this lies in the conviction that Israel will under no circumstances permit a nuclear-armed Iran to emerge and possesses the military capabilities needed to prevent that from happening. Meanwhile, the American willingness to conduct talks with Tehran without preconditions is for Europeans a welcome change of course well suited to increase the pressure on the Iranian regime. In this view, then, the offer can be understood as a test by the American administration meant to verify Tehran's willingness to negotiate. At the same time, the utility of multilateral action in reaching diplomatic solutions in general is verified.

In sum, this suggests a change in the United States' understanding of security with respect to nonproliferation, according to which security is achieved through a step-by-step threat reduction via mutual arms reduction and not by means of an overwhelming qualitative and quantitative military power potential. It would be a mistake, however, to interpret this change as a fundamental embrace of multilateralism. Rather, it represents a kind of tactical resort to multilateralism that builds on the expectation of reciprocal concessions. If this expectation is not fulfilled, Washington will try to secure its vital interests by other means.

Skepticism is Justified—But Cautious Optimism as Well

In sum, the potential for transatlantic cooperation and conflict in dealing with new security challenges and threats is ambivalent. On the one hand, given the emerging signs of actual change, there are significant opportunities for a renewed "rapprochement" between the transatlantic allies. On the other hand, one should not ignore the considerable potential for conflict arising as a result of Obama's taking office and the policy changes that will follow, as one can see, for example, in the discussion about adjustments in transatlantic burden-sharing in Afghanistan. The well-known public and political reservations in some NATO member states against an expanded involvement in the Hindu Kush, along with the obviously insufficient capabilities these actors possess, point to the central problem of contemporary transatlantic partnership. Despite nearly identical threat assessments at the political level, differences in threat perception in each country limit freedom of action. The view expressed by

the former German defense minister, Peter Struck—namely that Germany was engaged in its own defense along the Hindu Kush—has not found much resonance within the German public.⁵¹ Furthermore, while there is general consensus about the central goals, there are divergent views about the means to be used to achieve them. A case in point is the differing assessment of multilateralism (and its merits) by United States and “old Europe.” As Joachim Krause describes it, “While the United States subject[s] multilateralism to a cost-benefit analysis, structural and historical factors have led European governments to place a more axiomatic value on multilateralism, making it a guiding principal of their foreign policies.”⁵² This difference is significant and limits the prospects for a truly strategic dialogue between the transatlantic partners. One does not have to go as far as British historian Niall Ferguson, who places the blame for the transatlantic squabble in the run-up to the Iraq war of 2003 on France and Germany alone.⁵³ One should, however, point out that these countries do indeed bear part of the responsibility for the temporary damage in relations with the United States, owing to their own reluctance to engage in a truly strategic debate. If there will be no significant changes, then conflicts with the Obama administration are inevitable, especially since the United States has explicitly renewed its claim for international leadership. Moreover, in view of the persisting fragmentation of American society and the serious financial and economic crises the United States currently faces, President Obama has the colossal challenge to produce a grand strategy that integrates the various political viewpoints present within the United States. The importance of the domestic dimension as a factor in the American process of strategy making should not be underestimated.⁵⁴

Another central challenge facing both the United States and Europe lies in balancing ends and means in their foreign and security policies. The results of the Bush administration’s policies in this field turned out very badly indeed. But European shortcomings in this area cannot be considered less serious simply because they did not commit the degree of strategic mismanagement the United States did in postwar Iraq. The employment of the full spectrum of currently available means and, where needed, the development of new capabilities to ensure that the political objectives pursued are fulfilled are the first necessary steps to be taken. Additionally, an increased appreciation for the proportionality of ends and means is needed on both sides of the Atlantic. Here, it is of paramount importance to identify the means and methods necessary to attain the intended

results. Clearly, strategic action is interdependent; each of the two levels must take into consideration the demands but also the opportunities of the other. In sum, a critical analysis of the *ESS*, the report published last year dealing with the implementation of policy and containing relevant statements from the European Parliament, indicates that the EU has far greater deficits in this regard. For the United States it is primarily a matter of adjusting evident imbalances and resetting the framework of American strategy as it relates to the paradigm of the global war on terror—or Long War, as it has been relabeled in 2006. By contrast, Europe still lacks a conceptual foundation for a coherent strategy, in particular a definition of common European interests that could serve as a point of departure for coherent global operations. If the Atlantic partners are successful at overcoming their respective deficiencies, it could lay the basis for a real strategic dialogue which would help identify both the opportunities for cooperation in joint international action as well as those areas where different intentions compel the search for alternative ways of pursuing interests. But there still is a long way to go before we reach that point. **SSQ**

Notes

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Toward Cooperation or Conflict on the Moon?

Considering Lunar Governance in Historical Perspective

James Clay Moltz

THE QUESTION OF how the moon will be governed once humans return in about a decade and begin to establish permanent bases matters greatly to the future of international security. Already, a range of major powers have plans to participate in the moon's further scientific exploration, commercial exploitation, and possible permanent settlement. If we count both manned and robotic activities, this list currently includes the United States, China, Russia, India, Germany, the United Kingdom, the European Space Agency, Japan, and South Korea. Other countries are likely to join this list in the coming years.

Establishing a peaceful framework for lunar governance will be important, because hostile international relations on the moon are likely to lead to conflicts elsewhere in space and, possibly, on Earth. Such patterns regarding new frontiers have plagued the history of international relations for centuries. Indeed, despite frequent hopes for cooperation, most unclaimed territories historically have become sources of international conflict rather than serving as peaceful *lebensraum*. Typically, and consistent with realist predictions about international politics, states have had a built-in penchant to pursue relative gains over their rivals and therefore have sought to seize and defend new resources to their own advantage. On the other hand, successful formation of a stable, transnational governance system—a mechanism for sharing or otherwise peacefully allocating the moon's resources—could open the possibility for mutually beneficial and self-sustaining lunar commerce and settlement, consistent with neo-liberal

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institutionalist predictions. Such a model could have positive spin-off effects on Earth and set a cooperative pattern for further human exploration and development of the rest of the solar system, spurring states to pool resources and engage in joint approaches to space's many challenges. In such scenarios, hopes for "humankind" efforts in space—rather than state-driven rivalries—might be realized, something for which astronauts and cosmonauts who have visited space have often called. As Per Magnus Wijkman wrote on these issues in 1982, the "interdependence" of all actors in space provides "strong incentives" for the emergence of cooperative solutions.¹

Yet predictions from the literature on collective goods suggest that governing the "global commons" of space and the moon is likely to become increasingly difficult when finite resources face claims by multiple, self-interested actors. Such trends historically have led to processes of "enclosure" rather than successful collective management.² Thus, the question facing lunar settlement is: Can such conflicts be avoided and, if so, how?

In seeking to weigh possible alternative scenarios on the moon, this article analyzes historical cases of human settlement of remote regions and attempts to chart and categorize similarities and differences that might provide useful guidance for forecasting lunar governance—and, specifically, with the aim of avoiding international conflict. This study begins by comparing space to the international experience in three prior regions: settling the Americas in the 1500s, establishing permanent bases on the Antarctic continent in the late twentieth century, and managing the deep seabed since the 1980s. It then turns to the moon, starting with a historical survey of predictions about its settlement since the 1950s and relevant developments in the realm of international treaties affecting lunar activity. The article concludes by applying lessons drawn from the historical cases—and differences—to forecast likely directions on the moon. It argues that the current restraints imposed by moon-related treaties and the nonmilitary nature of the likely participants are likely to favor cooperation. But it cautions that such forces will have to be balanced against the likely presence of highly competitive national motivations. This mixed set of influences suggests a less cooperative outcome than on the Antarctic continent but a far more cooperative result than emerged in the struggle over governance and sovereignty issues in the New World of the Americas.

The New World Experience—Territorial Conflict

The European settlement of the New World in the Americas from the 1500s through the 1700s represents a process that is in many ways comparable to that of the coming human settlement of the moon. This earlier case involved nearly all of the great powers of the time (Portugal, Spain, France, Britain, the Netherlands, and Russia) and similarly daring, expensive, and risky national efforts. Their competition posed the prospect of destabilizing the existing international system by opening up a major new source of power and influence. The comparative weakness of the native peoples inhabiting the Americas at the time of this process resulted in their dislocation and eventual defeat by European colonizers, as one world forced itself, its more advanced technology, and its patterns of human organization, on another. In the process, however, these countries entered into conflict among themselves.

An initial “conflict management” regime created by the papal-sponsored Treaty of Tordesillas in 1494 divided the Americas into exclusive zones for the initial colonizers, Spain and Portugal. However, it soon fell apart due to several factors: (1) the wide availability of adequate sailing and navigation technology to locate and send rival missions to the New World, (2) the presence of multiple great powers in the international system, and (3) the absence of taboos against the use of weaponry and the corresponding acceptance of war as a means of conflict resolution. As a result, the outcome of the process of settling the New World became one of repeated warfare and a carving and recarving of the map of the Americas, seen most significantly in North America. One of the reasons for these conflicts was that key European adversaries—who lacked contiguous borders in Europe (such as England and France)—often had intersecting or even overlapping territorial claims in the New World. As historian Clarence L. Ver Steeg notes, “The battle for empire was being fought on the North American continent rather than in Europe.”³ Thus, the New World served in different periods as a kind of *surrogate* battlefield, although these conflicts often spilled back into Europe rather than dampening military tensions. Paul Kennedy summarizes that attitude of European rulers in moving aggressively into the New World: “There was the prospect of gaining glory and riches, of striking at a rival and boosting the resources of one’s own country, and of converting new souls to the one true faith; what possible counter-arguments could hold out against the launching of such ventures?”⁴

In regard to forms of governance, the basic political outcomes in the individual colonies were more or less a repetition of the various patterns in Europe, with the main social and political institutions and related forms of organization (religious, legal, legislative, and military) simply being transferred to the respective New World colonies. Although many of the colonies eventually achieved independence, their main postcolonial tendency was toward acceptance of existing concepts and structures (albeit with certain modifications). The ability of colonists to support themselves from the land and natural surroundings, the prevalence of “closed” mercantilist trading networks that reinforced economic links with their mother countries, and the great expanses of land failed to bring any *requirement* among them to form collective political institutions, which might have created *shared* governance across the Americas.⁵ Instead, very broadly speaking, authoritarian national governments with a strong church presence tended to dominate in South and Central America, whereas different forms of representative government tended to prevail in British and French North America (at least following the departure of Holland, Russia, and Spain).

In the economic realm, some analysts argue that the rapid institution of private property rights benefitted New World development, since these rules and incentives stimulated hard work, the improvement of the land, and economic competition. But the rapid emergence of territorially based disputes also made international governance *more* difficult, as states vied to own and occupy the most profitable regions. For all of these reasons, patterns of interstate conflict predicted under theories of realism simply repeated themselves in the New World, as power—rather than cooperative rules and norms—dictated the resolution of differences between states over sovereignty in regard to both territory and resources. Using Robert Jervis’ criteria for the successful development of cooperative security regimes, we can observe that states at the time did not “prefer a more regulated environment,” did not “believe that others share[d] the value they place[d] on mutual security and cooperation,” and faced conditions in which “one or more actors believe[d] that security [was] best provided for by expansion.”⁶ Under the circumstances, efforts at conflict resolution through regime formation were bound to fail.

The Antarctic Experience—Cooperation via the Postponement of National Claims

In the years immediately following World War II, the lessons and record of the establishment of a permanent human presence on the Antarctic

continent seemed poised to duplicate the experience of the New World. Indeed, conflicting territorial claims by Argentina, Australia, Britain, Chile, France, New Zealand, and Norway seemed to be leading toward heightened conflict, as several of these countries hoped to use the Antarctic continent for strategic and economic advantages. However, there were three main differences in the Antarctic case, compared to the New World experience: (1) the presence of a bipolar international structure, in which neither the United States nor the Soviet Union was eager to see war erupt over disputes on the frozen continent; (2) Antarctica's unclear military and commercial value, which raised doubts about the utility of force; and (3) the extreme severity of the climate, which raised the costs of human settlement significantly. As one analyst observed in 1980 regarding the emergence of peaceful relations on Antarctica: "The final reason for co-operation between the personnel of different nationalities is simply one of survival. Given the small number of persons ever deployed in the Antarctic, and the grave risks they run from accidents, they need to co-operate if only to look after themselves."⁷ Some of these factors are similar to those in space and may play an important role in its eventual governance of the moon. However, the shift from bipolarity to today's unipolarity and to possible future conditions of multipolarity may cause problems for the possible transformation of the existing Cold War regime in space.

Influenced by the factors listed above, international negotiations over Antarctica began in the 1950s toward a cooperative regime to ban traditional military and territorial competition. In 1959 these efforts came to fruition in the signing of the Antarctic Treaty, in which the main international actors agreed to postpone indefinitely their territorial claims and to establish a restrictive legal regime that banned military activity and unilateral commercial exploitation on the continent. Although bipolarity assisted in the regime's formation, fear of possible Soviet claims on the region in the early 1950s also helped draw earlier claimants (such as Britain and Australia) into supporting these efforts as well.⁸ After the necessary national ratifications, the treaty entered into force in 1961. While the regime waived issues of sovereignty and prevented relative gains, it lasted for 25 years due to the benefits of conflict prevention and the peaceful scientific study it provided.

In 1991 the regime faced a challenge as it came up for review and possible renewal. Given technological developments and the pressures for new oil supplies worldwide, some governments (and their corporations) pressured the states parties to open the continent for oil and other mineral

exploitation. But scientific and public outcry at the notion of the “loss” of this pristine continent eventually defeated commercial interests, and members of the treaty agreed to extend it for an additional 50 years, thus again putting off conflicting claims and development rights. Today, this historically remarkable experiment in conflict prevention through mutual self-restraint and nondevelopment remains in place, where many countries conduct research in jointly occupied and accessible stations. Commercial development remains limited to tourism, and activities in Antarctica still involve only a very small number of people, in part because of the expense of supporting them in the hostile climate.

Although the regime has survived the end of bipolarity, with the emergence of post–Cold War US hegemony, the reasons seem to have less to do with power than with shared thinking among the states—in political science terms, more of a “constructivist” notion.⁹ In other words, the goals of participants—thanks to the long-standing presence and institutionalization of the Antarctic regime—seem to have converged around the notion of environmental protection of the continent rather than its possible economic development for personal gain.¹⁰ Looking to the future, the question of the regime’s stability will rely on this consensus.

Indeed, some recent authors have criticized this anticommercial Antarctic regime. As one analyst writes:

Today, Antarctica is an example of what happens when property rights are denied and a government monopoly . . . is created. Rather than being a new job and wealth creator, activities on the continent are net expenditures to the taxpayers of the signatory nations. There is no growing infrastructure in and around the continent. There is no self-sustaining economy.¹¹

But environmentalists seeking to use Antarctic research to better understand such issues as climate change, government officials seeking to avoid unnecessary international confrontation, and military leaders who would otherwise be responsible for defending vying national commercial enterprises have remained supporters of the treaty. For these reasons, states have thus far been able to maintain the political consensus needed to sustain it.

Yet despite this example of a successful “conflict prevention” regime in the Antarctic, there are very few experts or officials calling for such a noncommercial structure for the moon. The major question, therefore, is whether the moon’s coming settlement will generate the economic, political, and eventual military conflicts typical of the New World, as well as similar cases of European exploitation of Africa and much of Asia prior

to World War I, or whether more successful conflict-prevention strategies can be developed. Before moving to the emerging moon race, one final and potentially relevant comparative case merits examination—the deep seabed. Like space, this region also contains potentially valuable minerals that might form the source of conflicts, but it has remained peaceful largely due to the impact of regime formation—although, similarly, not without the emergence of strong critics.

The Seabed Experience

In the second half of the twentieth century, the development of floating oil platforms and deep submersibles capable of reaching the sea bottom raised hopes that untold riches might soon be reaped from its development. But the questions in terms of governance were by whom and under whose control. Again, the United States and the Soviet Union sought to avoid conflict and the unilateral seizure of resources by any single country. After a process of international negotiation initiated by the superpowers in the late 1960s, the United Nations emerged as the main body empowered to address these issues and to consider options for international management and conflict prevention. In 1982, participating officials finally reached agreement on a system of rules and guidelines that both expanded national control over coastal regions and also facilitated (and required) international oversight of commercial activity on the ocean floor, which would be excluded from possible national territorial appropriation. By the time of its agreement, however, the United States had largely soured on the process. The Reagan administration refused to sign the eventual UN Convention on the Law of the Sea (UNCLOS) due to its opposition to the extension of exclusionary territorial waters and UN treatment of the seabed as the “common heritage of mankind.”

To govern the seabed, the UNCLOS established a body called the International Seabed Authority (ISA). The ISA required that any prospecting for minerals in the seabed be conducted only after international approval and licensing to ensure compliance with the UNCLOS clause regarding the “common heritage of mankind.” The treaty called for revenues from deep-sea mining to be pooled centrally and redistributed to cover (1) ISA administrative costs, (2) profits for the mining enterprises themselves, (3) compensation for states whose mining operations might be harmed economically by seabed operations, and (4) claims by other countries to

benefit from international seabed development.¹² Due largely to these “redistributive” clauses, the United States remains outside the UNCLOS regime today.

However, there has been an upsurge of recent US interest (including among leading military officials and members of the US Senate) in considering possible accession to the UNCLOS. Today, the main interest is to facilitate antiterrorism efforts and to give the United States a seat at the table in emerging debates over attempts by some countries (such as Russia) to use extensions of national geographical formations into the deep oceans as the basis for mineral and transit control claims, particularly in the Arctic. Some recent critics, however, have argued that joining the UNCLOS agreement will set a precedent of applying the UN redistributive concepts to the moon, thus purportedly harming incentives for commercial activity, since it bans private property and requires international approval of all development schemes. To date, there have been six countries (China, France, India, Japan, Russia, and South Korea) and one international consortium that have registered as “pioneer investors” with the ISA,¹³ thereby retaining exploratory (but not yet exploitative) rights to certain identified regions of the seabed. But no commercial mining has yet taken place. Indeed, to date, the development of the so-called Mining Code has not yet been completed.¹⁴ Critics argue that the weight of international regulations and the inability of states to own sections of the seabed have thwarted development to date. Supporters of the regime have noted the high costs of deep seabed exploration due to the technologies involved and indicated the *benefits* of international control: preventing abuses, unilateral exploitation, and environmental damage. Due to its still-incomplete implementation, however, the UNCLOS remains an experience whose lessons remain unclear for application to the moon’s future governance.

Predictions and Prescriptions Regarding the Moon’s Settlement

The literature appearing since the 1950s on the moon’s future settlement is voluminous. Moreover, it offers a range of governance options, from hostile military predictions to visions of scientific harmony. It is worth surveying this literature in some detail to understand the different concerns raised by various authors over time. As is frequently the case,

their conflicting predictions reflect fundamental differences in their underlying views of international relations, the motivations of states, and the prospects for successful and sustainable cooperation.

In the late 1950s, many military analysts predicted that the moon would become the ultimate “high ground” for defense and associated military operations, reflecting traditional realist assumptions about this new environment and the gloomy outlook for superpower cooperation in the midst of the Cold War. Senior officers, like Lt Gen Donald L. Putt, USAF, called in 1958 for the establishment of a US lunar missile base, which would purportedly give Washington the ability to rain nuclear weapons “down” on the Soviet Union while helping to establish a series of US military outposts on other planets for coming space warfare and competitive colonization. In this scenario, the moon was viewed simply as another pawn in the superpower conflict—bound to repeat the military-led dynamics seen on prior new frontiers. Critics, however, pointed out logical contradictions in this plan, noting that “if you did launch a bomb from the moon, the warhead would take five days to reach the earth. The war might be over by then.”¹⁵ Accordingly, after further vetting, such plans for military forces on the moon never reached fruition.

Other, more scientifically inclined space analysts predicted instead the possible supplanting of earthly competition through space exploration, reflective of institutionalist concepts regarding international relations. Such sentiments stemmed naturally from the hoped-for cooperation of scientists within the context of the International Geophysical Year (IGY) in 1957–58. British space enthusiast Arthur C. Clarke went even further—toward contemporary constructivist notions—in suggesting that cooperative space activities could provide a peaceful sublimation of man’s “aggressive and pioneering instincts.”¹⁶ German-born analyst Willey Ley¹⁷ and US physicist Albert R. Hibbs also expressed hopes for significant international co-operation in space and on the moon.¹⁸ A similar form of technological optimism and the expected rapid settlement of the moon pervaded Erik Bergaust’s 1964 book, *The Next Fifty Years in Space*, which predicted an active settlement program by the 1970s led by nuclear-powered rockets and moon-based nuclear reactors.¹⁹

While falling far short of the cooperative hopes of scientists, efforts by the two superpowers to “manage” space competition and rule out its more harmful manifestations—such as nuclear weapons—began in 1963. Two UN resolutions approved in the fall of that year called for states to refrain

from placing weapons of mass destruction in orbit and to apply existing legal principles and protections to space activity. Meanwhile, the signing of the 1963 US-Soviet-UK Limited Test Ban Treaty banned further tests of nuclear weapons in space after nine orbital explosions from 1958 to 1962 had caused serious damage to a number of first-generation satellites. Subsequent steps went further, as the superpowers sought to prevent the moon race from spilling over into direct conflict or other hostile actions. In negotiating and signing the 1967 Outer Space Treaty (OST), the superpowers accepted a range of mutual legal restrictions on their own activities, including those planned for the moon.²⁰

For example, Article II of the OST stated that the moon “is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means.”²¹ While most experts have since argued that this bans private property, the language was vague enough to suggest that some forms of commercial appropriation (particularly if carried out under international sanction) were possible. A perhaps more critical issue in terms of conflict prevention was Article IV, which drew on the 1959 Antarctic Treaty’s restrictions and required that “military bases, installations and fortifications, the testing of any type of weapons, and the conduct of military manoeuvres on celestial bodies shall be forbidden.”

Also limiting potential lunar commercial activities and promoting notions of sustainable development was Article IX, which required states in their activities on the moon and other celestial bodies alike to “avoid their harmful contamination.” Finally, Article XII of the treaty outlined an inspection regime to promote transparency and cooperation, stating: “All stations, installations, equipment and space vehicles on the Moon and other celestial bodies shall be open to representatives of other States Parties to the Treaty on a basis of reciprocity.” Again, these principles came directly from the Antarctic Treaty, which was fresh on the minds of the government lawyers and diplomats who put together the OST.

With the détente era just beginning to emerge and with the OST in place, analyst Neil P. Ruzic boldly outlined in 1970 a possible “phased” progression from competition to gradual cooperation on the moon. Ruzic predicted an initial phase characterized by rival US and Soviet bases followed by eventual collaboration spurred by the practical needs of the two sides to join together to overcome common survival challenges on the moon.²² As he predicted the progress of superpower rapprochement on the moon by 2010, “it became cheaper for the two spacefaring nations of

Earth to pool their resources in a cooperative effort than to compete.”²³ Although clearly overly optimistic about the date of this development—and the presence of several thousand “lunarians” by this time—Ruzic’s approach was rooted in the influence of practical settlement-related demands on governance and the eventual institutionalization of cooperation. Ruzic predicted that, indeed, as cooperation on the moon developed further and the lunar population increased, an independent “lunar legislature” would emerge to decide critical functional issues, thus suggesting the transfer of sovereignty questions from Earth residents to those of the moon itself.

In reality, however, interest in moon settlement dampened considerably after the Apollo landing in 1969. Pres. Richard Nixon shelved the US lunar program in the early 1970s, and no human beings have since stepped on the moon’s surface. The technologies for a permanent settlement were deemed too expensive, and the “demand” for the moon’s colonization proved relatively weak, particularly when placed into the context of the more urgent resource demands of the Vietnam War, Johnson’s Great Society programs, and dealing with the economic implications of emerging US oil dependency on the Middle East. Meanwhile, the Soviet Union declined to take on the risks and expense of its own human exploration on the moon since the Americans had already taken the big prize. Visions of lunar futurists moved quietly to the back burner.

But as other countries sought to prevent what appeared to be a threat of the moon’s exclusive future settlement by the two superpowers, the United Nations hosted an effort to craft a moon treaty in the 1970s. The eventual draft document called for international control over lunar resources and the formation of an international organization to allocate profits, similar to efforts at the time in regard to the seabed. The draft also emphasized that the moon’s resources could not be “claimed” by any nation and that they constituted instead the “common heritage of mankind.” The Moon Treaty’s signing by several states in 1979 and its entry into force in 1984 (despite lack of support from either superpower) caused scholars and analysts to begin to examine possible international governance models for the moon in the context of the new treaty.

Recognizing the presence of the Moon Treaty, but seeking to avoid possible obstacles to development posed by its “common heritage of mankind” clause and requirement for the formation of an international authority to govern commercial operations, Christopher C. Joyner and former astronaut Harrison H. Schmitt sought an interpretation of the agreement that could

nevertheless promote successful economic development of the moon. In this effort, they looked not to the experience of the UNCLOS, but instead to the more space-relevant example of INTELSAT, the US-led organization that had helped foster the satellite communications industry while sharing the benefits of this technology with non-space-faring nations. Their concept, which they dubbed INTERLUNE, aimed at creating a “feasible administrative system and a peaceful management environment” to facilitate the moon’s settlement and development without conflicts.²⁴ The idea behind INTERLUNE was inherently collaborative but, like the Antarctic system, would be based on governance according to participation in settlement activities. It went further, however, in calling for shares and voting within the organization to be determined by a country’s level of investment. Such a structure, according to Joyner and Schmitt, would avoid the problem of nonspace actors trying to “dictate” to space pioneers while both allowing profits to be had from the moon’s settlement and creating a viable international governance structure that would be peacefully oriented, legally transparent, and open to new members. At the same time, INTERLUNE would avoid the problems of unilateral settlement schemes and the almost inevitable conflicts such models would likely entail. Interestingly, the current literature on lunar governance seems to have forgotten this innovative suggestion. But the idea remains relevant, particularly as states and nonstate actors seek to move from initial return flights to more permanent lunar settlements.

Other writings from the mid-1980s predicted a very gradual process of settling the moon, starting first with the goal of “scientific observation” and only much later (likely after 2035) moving into commercial exploitation.²⁵ From this context, early moon return missions could be compared historically to some of the great scientific expeditions that had spurred exploration of the American West, Africa, and the Antarctic from the early 1800s to the early 1900s. As Phillip M. Smith writes, these missions by Great Britain, France, Russia, and the United States (among others) were similar to likely future lunar or Mars missions in that “one left with the expectation of being away from home for several years, possibly not returning at all.”²⁶ The more advanced state of international cooperation in scientific exploration by the late twentieth century, according to Smith, increased the chances that lunar governance might be developed on the basis of multinational scientific collaboration. However, writing at the height of US-Soviet tensions during the Reagan administration, Smith argued that

analysts should not neglect the importance of nationalism in motivating expeditions like the moon's settlement. He predicted that true international collaboration by 2035 was "difficult to imagine."²⁷ Smith viewed the most likely outcome as one in which a major country—probably the United States—would take the lead in lunar exploration and then accept partners on a *per contribution* basis, similar to the then-developing plan for the then-US-led international space station.

A competing, institutionalist approach developed by Amanda Lee Moore offered the model of the International Telecommunications Union's regulation of radio frequencies and geostationary orbital slots as a possible example for successful lunar governance.²⁸ She proposed that a conference of states might address contentious issues, such as the Moon Treaty's "common heritage of mankind" clause, and simply lay out an interpretation of this vague phrase that would rule out national sovereignty over lunar real estate but accept notions of profit and economic development. In general, Moore posited that muddling through in an ad hoc manner via bilateral agreements among states active in moon exploration, while possible, would lead to far from optimal solutions to the lunar governance dilemma compared to formal, international efforts to lay out clear rules to govern state behavior.

As technology advanced in the late 1990s and global tensions eased following the Soviet Union's demise, another "take" on the moon's settlement emerged from Artemis Society²⁹ member and chief executive of the so-called Lunar Development Corporation Gregory Bennett—one led by space tourism.³⁰ The concept outlined the initial reestablishment of human exploration on the moon via privately funded tourism, which would create the necessary life-support infrastructure. While most analysts focused on industrial enterprises—like the mining of helium-3—Bennett argued provocatively, "I'd rather see it developed like Honolulu." Such a scenario ruled out national competition as the primary motivation, focusing instead on profit and "fun."³¹ However, such notions challenged the Outer Space Treaty (given its lack of specific mechanisms for allotting lunar locations) and rejected the Antarctic model outright, possibly sowing the seeds for at least commercial conflict. Today, whether the tourism industry will lead the process of lunar settlement still remains to be seen, although a few private organizations supporting moon development (such as the Netherlands-based LUNEX group) have already crafted elaborate scenarios around this possibility. The question raised by realist theory is

whether military forces might eventually be required to “defend” such commercial assets. Such future pressures, on the other hand, might be mitigated by multinational ownership or at least financing of such ventures, which is likely.

In the twenty-first-century literature on lunar governance alternatives, some of the most active and vocal authors have focused on commercial issues and the perceived “anti-development” bias of the OST—also explicitly rejecting the Antarctic experience. Indeed, a virtual cottage industry has emerged criticizing the OST as “unworkable” and even an *impediment* to settlement of the moon because of its ban on private property rights. The argument is that Antarctica “proves” that such treaties impede commercial development to the detriment of all plans for lunar mining, solar farms, construction, tourism, or other profit-oriented activities.³² As Robert Zimmerman argues, “While [the United States] might have won the Cold War here on Earth, the Soviet Union apparently has won the Cold War in space,”³³ implying a link between Soviet communism and UN-based governance formulas. He foresees no possible future for moon development under the current legal regime and urges the United States to withdraw from the OST.

Although some recent analysts argue that such a “free for all” approach would best benefit lunar development, others, such as Everett Dolman, support an OST withdrawal only in the context of its replacement by a new regime.³⁴ In Dolman’s view, the new structure “must rest on principles and norms consistent with capitalism and liberal democracy, and at the same time must recognize the obligation the richer states have to assist the poorer ones in a domain in which they cannot compete.”³⁵ To others, given the growing trend toward capitalism already extant across the globe (even in China), this might better be done by clarifying implementation clauses for the OST and the Moon Treaty, rather than walking away from the existing legal framework for space entirely.

The literature on regime transformation suggests that such developments most often occur in the presence of one of three factors: (1) internal contradictions within the regime, (2) a change in the structure of power that affects the regime, or (3) an exogenous change in technology or other relevant influence.³⁶ In regard to the first factor, some critics might argue that the OST regime is contradictory by allowing for lunar development but denying national property rights. While it is true that the OST forbids national ownership, existing practice in certain other areas allows

such development without providing specific property rights to the developer. (An example might be a lease to drill for oil in a national park or forest.) Regarding the second factor, it is clear that the structure of the international system has shifted from superpower bipolarity to conditions of unipolarity since the end of the Cold War and may be on its way to some form of future multipolarity. At the same time, no countries have indicated an intention to withdraw from the OST to date. Whether such shifts in relative power will lead to future withdrawals remains to be seen. Finally, we cannot rule out the possibility of an exogenous change that might affect the OST. For example, a sudden breakthrough in the cost of spaceflight allowing all nations to send missions to the moon could put unbearable commercial (and political) pressure on the existing OST system. To date, however, it is hard to imagine a shift that would allow more than a small number of the most technologically advanced countries to lead the process of settling the moon. For these reasons, any “requirement” for the OST regime’s transformation is as yet unclear.

In a provocative recent article, space analyst Andrew Brearley argues for the OST’s continued relevance, albeit with possible future modifications or clarifications. He makes the point that “even though the OST prevents states from owning the moon, it does not prevent them from exploiting it.”³⁷ Brearley compares the future lunar legal environment to that associated with the seabed, a similar “global commons.”³⁸ He makes the case that an international management organization modeled on the UNCLOS arrangement could serve as an effective governance tool for the moon. Pointing specifically to follow-on implementation agreements in 1996 associated with the UNCLOS to make it more palatable to major states that might become engaged in seabed mining, Brearley argues that similar implement agreements might be reached regarding the Moon Treaty, if agreed to by major space-faring states.³⁹ He proposes what he calls a Lunar Resource Authority to govern applications for and management of mining operations by states or commercial consortia. This agreement would allow profit making, but without transferring actual ownership of sections of the moon to specific countries or enterprises, thus remaining consistent with the OST. One option would be through a licensing system, which would create the “pseudo property rights” that Brearley believes are needed to allow successful commercial operations to be pursued.⁴⁰

Another take on these institutional issues is provided by space lawyer Rosanna Sattler.⁴¹ She points out the gaps in the existing legal framework for the moon's development and accepts the problems posed by trying to follow the Antarctic model. But she suggests that solutions can be found by modifying current treaties and looking to other models within existing space law, citing in particular the International Space Station Inter-governmental Agreement (ISSIA). The ISSIA, she argues, "could easily be applied to space tourism, settlement, and bases of operation on . . . the Moon and Mars."⁴² Although under the coordination of NASA, the ISSIA provides for individual technological development by member states and a system for international dispute resolution by referral either to the International Court of Justice or the World Trade Organization, depending on the nature of the conflict. To date, no disputes have risen to that level. Another concept Sattler views as worthy of investigation is that of the UNCLOS Exclusive Economic Zones, which could be activated on the moon through a system of "long-term leases or licenses." Overall, Sattler outlines a system based on "combining and refining elements" of existing international law while emphasizing the importance of gaining "support from the industrialized nations."⁴³

The debate on the issue of commercial development of the moon's resources is an important and still unresolved one. As Brearley notes, it would be highly desirable for states to settle these issues before the next humans set foot on the moon. Once humans begin landing and staying on the moon, complex issues will quickly arise. Key variables in the process of international discussion and possible negotiation include (1) the nature of the leading space actors and their interrelations at the time of the moon's settlement, (2) the status of existing space-related treaties and restraint-based norms, (3) the prospects for lucrative contracts (which could promote either competition or cooperation), (4) the extent of the resources and locations available (more likely to promote competition), and (5) the availability of cost-effective technology for their exploitation.

Of all these factors, the first two—the status of international relations among participants and their willingness to comply with existing space treaties and norms—may be the most important, even above resource scarcity or the availability of technology. It almost goes without saying that friendly relations and cooperative exploratory projects on the moon and in the solar system will greatly increase the chances of successful management of moon conflicts. This suggests that realist factors alone are not likely to

dictate a break-up of the OST or the existing consensus on cooperative restraint on the exercise of military power. Of course, hostile relations (such as between the United States and China) cannot be ruled out and could lead to unilateral efforts to seize locations and establish nationally oriented keep-out and governance regimes, whether or not resources are scarce. However, violation of the OST in this manner could have other repercussions on space security and would have to be considered carefully by any state undertaking such policies. Hostile or self-serving actions on the moon could harm a country's interests in other areas of space or on Earth, leading to rival coalitions against it and efforts to undercut its attempted unilateral gains—possibly through military means.

Considering the rival conceptual approaches reviewed above, while looking back at the three prior cases analyzed in this article (the New World, Antarctica, and the seabed) and comparing them to the moon, we see in the table below that the presence or absence of certain incentives and institutional factors have affected outcomes on past international frontiers and might be expected to contribute to outcomes on the moon as well. These include the nature of the international system (and the level of conflict); the nature of the physical environment (and related costs of settlement); the acceptability of territorial acquisition and military activities; the viability of commercial activities; and the existence (or absence) of a transnational governance structure (regime) for the new frontier. These factors have all contributed in various ways to either conflictual or cooperative outcomes. On the last point, the role of the existing international regime embedded in the OST may be especially significant.

As Robert Keohane argues on the impact of regimes in shaping the behavior of states:

International regimes alter the information available to governments and the opportunities open to them; commitments made to support such institutions can only be broken at a cost to reputation. International regimes therefore change the calculations of advantage that governments make.⁴⁴

The challenge in space will be whether legal and political developments that emerged in the late twentieth century can mitigate possible twenty-first-century hostilities while also allowing the moon (and other celestial bodies) to be both explored scientifically and developed commercially under likely conditions of future multipolarity in the international system.

Summary of factors affecting governance in four “frontier” environments

Frontier	World political structure at time of governance agreement	Nature of physical environment	Territorial acquisition acceptable?	Military activities allowed?	Commercial activities allowed?	Transnational governance structure	Outcome
New World	Multipolar	Hospitable	Yes	Yes	Yes	No	International conflict
Antarctica	Bipolar	Harsh	No	No	No	Council of Member States	Joint scientific research and cooperation
Seabed	Bipolar	Difficult	No (beyond EEZ)	Yes	Yes	International Seabed Authority	Lack of consensus
Moon	Moving from Unipolar to Multipolar	Extremely harsh	No	No	Yes	Outer Space Treaty (but no current implementing authority)	?

Historical Governance Models and Their Associated Outcomes

In reviewing the findings of this study, we can observe that there is no predetermined outcome in regard to the moon. At the same time, there are certain tendencies that will affect lunar governance and shape the factors likely to play an important role in determining the specific regime formed. In terms of policy recommendations for avoiding hostile outcomes on the moon, several specific measures should be considered by states—and, preferably, soon.

First, if conflict is to be avoided, countries planning to go to the moon would be well advised to begin discussions *in advance* of the actual missions to develop protocols for peaceful interaction. Fortunately, some of these measures are tentatively being developed in the context of the International Lunar Network, a collective effort by national space agencies and universities to develop a common set of scientific standards and communicative mechanisms to ensure international ability to cooperate and benefit from one another’s data in upcoming lunar missions.

Second, national governments would be wise to clarify existing ambiguities in the OST regime. This might require a formal review of the treaty to discuss definitions and develop an implementing agreement for multilateral understandings on how to interpret the OST in regard to specific lunar activities (particularly, regarding permitted and prohibited

settlement practices). A similar review of clauses in the 1968 Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space would be beneficial to clarify possible provisions that may foster mutual assistance during moon operations.

Third, countries planning human or robotic commerce on the moon would be well served to begin discussions toward development of a code of “lunar commercial conduct,” particularly in terms of compliance with the OST. As stated above, the OST is vague on these provisions, and considerable leeway is available to states collectively to determine how they wish to divide resources, benefits, and claims to specific areas. Such a commercial code could substitute for the dearth of support for the Moon Treaty’s provisions and yet still provide meaningful guidelines and help prevent conflict. It could also help create a workable formula (or mechanism) for sharing the moon’s “benefits” internationally, in compliance with Article I of the OST that calls for all space exploration to be conducted “for the benefit and in the interests of all countries.” Such efforts will have to be constructed in such a manner that they are not unduly burdensome for the individual commercial aims of states on the moon or such states (and their companies) may decide to break out of such accords.

Fourth, states, companies, universities, and other entities planning activities on the moon might usefully establish a formal consultative council for the settlement of any problems that might emerge among scientists, tourists, or commercial operators on the moon. This body could simply be a standing committee that would meet only to address specific disputes raised before it, or it could serve as a clearinghouse for emerging problems that are best dealt with in a preventive manner.

Fifth, political relations affecting the moon’s settlement would benefit if all of the parties planning to become involved in lunar exploration would publicly reiterate their support for Article IV of the OST on nonmilitarization of the moon. Similarly, the voluntary development of practical protocols and transparency mechanisms to facilitate mutual inspections of lunar facilities—as in the Antarctic—would also promote trust and cooperation and work in the service of conflict prevention.

While pressures for “enclosure” of the moon and the privatization of its resources are likely to increase in the coming decades—at least until more specific management structures are developed and implemented—there are reasonable grounds for believing that cooperative efforts may eventually succeed. The combined effects of economic globalization, modern

communications, increasing lunar mission transparency, and the recent internationalization of large space activities (such as the International Space Station), should help facilitate these trends. Broader international trends toward the adoption of rule-based behavior (such as in the World Trade Organization) and negotiated approaches to conflict resolution support institutionally based outcomes on the moon. Thus, while history's "lessons" in regard to international cooperation on the moon may be pessimistic, specific differences in the factors surrounding lunar settlement offer reasons to believe that the negative experience on certain past frontiers may be avoided. The remaining question seems to be the willingness of current and future leaders to recognize the remaining risks and challenges that exist regarding successful lunar governance and to begin talks to address possible disputes through preventive diplomacy and existing international agreements and organizational structures. These developments are far from inevitable, but such possibilities—in the context of the relevant history of similar environments and the implications of direct military conflict today—seem to have the force of mutual self-interest behind them. **SSQ**

Notes

1. Per Magnus Wijkman, "Managing the Global Commons," *International Organization* 36, no. 3 (Summer 1982): 535.
2. On this line of reasoning, see Garrett Hardin's classic article, "The Tragedy of the Commons," *Science* 162, no. 3859 (December 1968): 1243–48.
3. Clarence L. Ver Steeg, *The Formative Years: 1607–1763* (New York: Hill and Wang, 1964), 293.
4. Paul Kennedy, *The Rise and Fall of the Great Powers* (New York: Random House, 1989), 29.
5. Even the much-later emergence of the Organization of American States fails to meet the criteria of a true regional governance body along the lines of the European Union today.
6. Robert Jervis, "Security Regimes," in Stephen D. Krasner, ed., *International Regimes* (Ithaca, NY: Cornell University Press, 1983), 176–77.
7. K. D. Suter, *World Law and the Last Wilderness* (Sydney, Australia: Friends of the Earth, 1980), 22. Suter mentions a specific case, for example, where a gravely ill Australian technician had to be evacuated in 1978 through cooperation between the United States and the Soviet Union.
8. Christopher C. Joyner, *Governing the Frozen Commons: The Antarctic Regime and Environmental Protection* (Columbia: University of South Carolina Press, 1998), 21.
9. On the principles of the constructivist approach within international relations theory, see John Gerard Ruggie, "What Makes the World Hang Together? Neo-Utilitarianism and the Social Constructivist Challenge," *International Organization* 52, no. 4, (Autumn 1998): 855–85.
10. On the process of the institutionalization of such ideas under the influence of regimes, see Judith Goldstein and Robert O. Keohane, "Ideas and Foreign Policy: An Analytical Frame-

work," in Goldstein and Keohane, eds., *Ideas and Foreign Policy: Beliefs, Institutions, and Policy Change* (Ithaca: Cornell University Press, 1993), 20–24.

11. Alex Gimarc, "History and Frontiers—What Works. What Doesn't," in Rick Tumlinson, ed., *Return to the Moon* (Burlington, Ontario: Collector's Guide Publishing/Apogee Books, 2005), 39.

12. See text of the UNCLOS, part XI, section 4, article 173, on the Web site of the UN Division for Ocean Affairs and the Law of the Sea at http://www.un.org/Depts/los/convention_agreements/texts/unclos/closindx.htm.

13. See the Web site of the UN Division for Ocean Affairs and the Law of the Sea report entitled "The United Nations Convention on the Law of the Sea (A Historical Perspective)" at http://www.un.org/Depts/los/convention_agreements/convention_historical_perspective.htm.

14. See the Web site of the International Seabed Authority at <http://www.isa.org.jm/en/documents/mcode>.

15. Lee A. DuBridge (then-president of Cal Tech), "Plain Talk about Space Flight" (1958), reprinted in Lester M. Hirsh, *Man and Space: A Controlled Research Reader* (New York: Pitman Publishing Corp., 1966), 101.

16. Arthur C. Clarke, *The Exploration of Space* (New York: Harper, 1959), 181.

17. Willey Ley, *Harnessing Space* (New York: Macmillan, 1963).

18. A. R. Hibbs, "Space Man Versus Space Machine," in Hirsh, *Man and Space*, 87.

19. Erik Bergaust, *The Next Fifty Years in Space* (New York: MacMillan, 1964).

20. See the text of the Outer Space Treaty on the State Department Web site at <http://www.state.gov/t/ac/trt/5181.htm#treaty>.

21. Ibid.

22. Neil Ruzic, *Where the Winds Sleep: Man's Future on the Moon, A Projected History* (Garden City, NY: Doubleday and Co., 1970).

23. Ibid., 127.

24. Christopher C. Joyner and Harrison H. Schmitt, "Extraterrestrial Law and Lunar Bases: General Legal Principles and a Particular Regime Proposal (INTERLUNE)," in W. W. Mendell, ed., *Lunar Bases and Space Activities of the 21st Century* (Houston, TX: Lunar and Planetary Society, 1985), 745.

25. See Phillip M. Smith, "Lunar Stations: Prospects for International Cooperation," in Mendell, ed., *Lunar Bases and Space Activities*.

26. Ibid., 718.

27. Ibid., 723.

28. Amanda Lee Moore, "Legal Responses for Lunar Bases and Space Activities in the 21st Century," in Mendell, ed., *Lunar Bases and Space Activities*.

29. The Artemis Society is a private group devoted to the study, development, and settlement of the moon.

30. See Fred Guterl, "What Should We Do With the Moon?" *Discover* 19, no. 9 (September 1998), 84.

31. Ibid.

32. Gimarc, "History and Frontiers," 40.

33. Robert Zimmerman, "Brave New World? American Colonial History as a Guide for Designing the New American Space Initiative," in Tumlinson, ed., *Return to the Moon*, 80.

34. Everett C. Dolman, *Astropolitik: Classical Geopolitics in the Space Age* (London: Frank Cass, 2002).

35. Ibid., 177.

36. Oran R. Young, "Regime dynamics: the rise and fall of international regimes," in Stephen D. Krasner, ed., *International Regimes* (Ithaca: Cornell University Press, 1983), 106–11.

Toward Cooperation or Conflict on the Moon?

37. Andrew Brearley, "Mining the Moon: Owning the Night Sky?" *Astropolitics* 4, no. 1 (Spring 2006): 59.
38. Ibid., 49.
39. Ibid., 62.
40. Ibid., 56.
41. Rosanna Sattler, "Transporting a Legal System From the Earth to the Moon," in Tumlinson, ed., *Return to the Moon*.
42. Ibid., 100.
43. Ibid., 103.
44. Robert Keohane, *After Hegemony: Cooperation and Discord in the World Political Economy* (Princeton, NJ: Princeton University Press, 1984), 26.

Back From the Future

The Impact of Change on Airpower in the Decades Ahead

Mark Clodfelter

FORECASTING THE future is an inherently uncertain endeavor that carries great implications for military force structures and doctrines. As military leaders try to determine if their services are postured to thwart anticipated threats and flexible enough to adapt to unknown challenges, they confront the notion of *change*—the conviction that war is an evolving phenomenon subject to periodic transformations. *The Joint Operating Environment 2008: Challenges and Implications for the Future Joint Force*, published by US Joint Forces Command in November 2008, is one of many recent attempts to forecast the changing conditions that the American military will likely face in the next quarter century; other militaries will doubtless produce their own projections.¹

Air forces are especially prone to emphasizing how change affects war. Because of their heavy dependence on technology to fight in an unfriendly medium and the transitory nature of operations in the air, they place perhaps a greater premium on the relationship between war and change than the other military services.² Yet change in war stems from more than simply technological advance. As Carl von Clausewitz observed almost two centuries ago, the composition of forces, the objectives they pursue, and how they choose to pursue those goals can often affect the conduct of war as much as the technology used by military forces. Clausewitz further maintained that military transformations occur against the backdrop of constants that comprise war's enduring nature. Although the Prussian military philosopher never saw an aircraft, his fundamental notions regarding change and war apply directly to Airmen and their political masters attempting to

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visualize the future. For airpower to be an effective military instrument in the decades ahead, the political and military leaders who employ it must be able to distinguish between the aspects of war that change and those that endure over time.³

The Fundamental Nature of War

Clausewitz rightly noted that war is not a stagnant endeavor. The manner in which it is conducted is not a constant, and technological change is one reason for that disparity. The invention of the airplane, jet engine, laser-guided bomb, GPS satellite, et cetera, et cetera, all affect how war is waged. Equally significant, the character of war is also not a constant and is defined by who fights and why they do so. Since the time of Clausewitz and the rise of “citizen soldier” armies triggered by the French Revolution, the composition of military forces has varied greatly, as have the political goals pursued by those who directed armies, navies, and air forces. The combination of changes in both the character and conduct of war has spurred different strategic approaches—for example, strategies of annihilation vs. strategies of attrition, strategies emphasizing conventional methods vs. irregular techniques, and sequential vs. parallel strategies, just to name a few—and such strategic choices have profound ramifications for the employment of airpower. Thus, change consists, in part, of evolving variations in war’s character and conduct. Those developments, and the strategic approaches that flow from them, will help determine whether airpower succeeds.

Defining success, though, may prove difficult for leaders who turn to airpower in the years ahead. Clausewitz offered guidance for that definition. He wrote that war’s “grammar, indeed, may be its own, but not its logic.”⁴ The grammar of war is relatively straightforward and consists of the tools of war and their manner of employment to be effective—for instance, the combination of astronautics, aeronautics, physics, and computer science that enables a GPS-guided 2000-lb joint direct attack munition (JDAM) to hit its target when dropped from an F-15E five miles away. Yet unless the “logic” of the war is also correct, the smooth application of its grammar is no guarantee of success. Is the target hit by the JDAM actually the correct one for an air strike? What is the connection between the target bombed and war aims pursued? How does destroying a particular target move the nation applying airpower a step closer to “victory”—and what, precisely, is the definition of that elusive term? For the application of airpower, or any

military instrument, to be successful, it must help to achieve the desired political objectives of those who use it.

Understanding how change in war will impact airpower's effectiveness requires first understanding those aspects of war that endure over time. Accordingly, one must appreciate war's *constants* to identify its transitions, and war has more than a few attributes that are *unchanging*. Clausewitz contended that those constant elements comprise war's *nature*—components that would always be present, regardless of how, when, or where war was fought. Three key, interrelated elements form Clausewitz's nature of war. First, war will always have emotion—passion, enmity, and hatred—that spurs it towards violence. Next, war will always contain friction—the unexpected, chance, danger, and exertion—and the creativity to counter those disruptive forces. And finally, reason will always drive war, though the logic that produces the decision to fight and defines the objectives may not be readily apparent to all observers—and may, indeed, prove faulty. Together, those three components form Clausewitz's Trinity of War, and the manner in which they relate to one another is likely to be different for every conflict. Yet a relationship among the three is *always* present. Clausewitz further observed that emotion will mainly—but not exclusively—affect the populace; friction and creativity will mainly—but not exclusively—affect the armed forces and their commanders; and reason will mainly—but not exclusively—affect the governmental body directing the war effort.⁵ Airmen who fail to appreciate that those relationships exist—and *how* they bond together for a specific enemy or ally, as well as for his or her own nation—stand on very shaky ground, especially if they must apply kinetic force to help achieve political goals.

Thus, before knowing how change is likely to affect the employment of airpower, commanders must understand and define the *constants*. They must decipher the logic that is likely to guide the enemy leader's use of force, determine how passion may inflame an enemy populace, and envisage the creative measures that enemy commanders are likely to adopt when faced by the unexpected. Commanders must likewise comprehend the rationale behind the political objectives pursued by their own nation, and the constraints that help to refine those objectives, plus they must appreciate the support that the war effort will likely receive from their own populace—as well as on the stage of world public opinion. The commander must further have a thorough understanding of the capabilities available for use—not just the airpower capabilities, but also those of land and sea forces—and

a full appreciation that the enemy is going to do everything possible to negate those advantages; the last thing that an opponent is going to do is “fight fair.”

In short, twenty-first-century leaders must be well versed in what may be termed Clausewitz’s fundamental law: “The first, the supreme, the most far-reaching act of judgment that the statesman and commander have to make is to establish . . . the kind of war on which they are embarking; neither mistaking it for, nor trying to turn it into, something that is alien to its nature.”⁶ He added: “No one starts a war—or rather, no one in his senses ought to do so—without first being clear in his mind what he intends to achieve by that war and how he intends to conduct it.”⁷ The key for the air commander, as well as for the political leader who gives the commander orders, is never to forget that war—and hence airpower—are political instruments designed to achieve specific national goals, and the manner in which the airpower is used, and its true test of effectiveness, depends on how well it suits the war aims sought. This fundamental truth hearkens back to Giulio Douhet, Hugh Trenchard, and Billy Mitchell, yet today we continually hear the mantra of “effects based” airpower—that designed specifically to achieve broad, systematic results on an enemy’s war-making ability or behavior.⁸ Pure and simple—if airpower fails to support the political goal sought, it will not be effective—a true statement for the twenty-first century and the centuries that follow.

Airpower in the Context of Change in War

With that brief—but necessary—foundation of how understanding the unchanging *nature* of war is fundamental to the sound use of airpower in the years ahead, let us return to the facets of war that are almost certain to change in the future—war’s *conduct* and *character*—and how those changes are likely to affect Airmen. As mentioned, technological advance is a key factor in the ever-changing conduct of war, and continued high-tech developments will have significant consequences for the world’s air forces. First and foremost, increasingly sophisticated technologies will come with a steep price tag, and those costs will limit the ability of many nations to generate a substantial air force, especially one capable of providing more than self-defense.

The conduct of war on a global scale using high-technology platforms has become increasingly expensive. The US Air Force—the world’s only

air force with a truly global capability—has pursued a 2009 budget of almost \$144 billion, roughly 28 percent of the \$515 billion sought by the entire Department of Defense.⁹ The request is \$8.6 billion more than the Air Force received for 2008, and more than \$2 billion of the increase will go toward expenses for fuel and utilities.¹⁰ Just a \$10 rise for a barrel of oil costs the Air Force almost \$600 million a year.¹¹ To curb spending, the service has developed a fuel blend that includes synthetic kerosene derived from natural gas, and the trend towards synthetic fuels will influence many air forces in the years ahead. The fluctuating price of oil has helped limit the US Air Force to request only 93 new aircraft for 2009.¹² Of that total, just 28 are fighters—20 F-22s and 8 F-35s. The “fly away” costs for these aircraft—which include money spent only on production, not research and development¹³—come to between 140 and 160 million dollars for each F-22 and \$50 million for each F-35—a combined total of roughly \$3.5 billion.¹⁴

Such staggering costs for the latest and greatest in high-tech sophistication guarantee not only that a decreasing number of fifth-generation fighters will replace their fourth-generation counterparts, but also that many nations will consider alternatives to creating their own fifth-generation fighter. Most countries simply cannot afford to fund such a project alone, and the international backing that has highlighted the development of the F-35 is a trend that will continue in the decades ahead.¹⁵ Russia and India announced in December 2007 that they would jointly develop and produce a fifth-generation, multirole fighter that could appear on the market between 2015 and 2020.¹⁶ For nations looking to upgrade their kinetic airpower capabilities, multirole capability is the key; gone are the days when aircraft designs would focus specifically on air superiority, strategic bombing, or close air support.¹⁷ The F-22 can carry eight GBU-39 small-diameter bombs, while F-35 variants can carry as many as six AIM-120C radar-guided air-to-air missiles; the costs to build high-speed, thrust-vectoring, stealthy, super-cruise aircraft are simply too great not to incorporate the maximum on them in terms of combat capabilities. The multirole requirements create potential problems, though, for the pilots who must master the sophisticated technologies associated with each of the aircrafts’ various missions. How much training is enough to achieve proficiency in each task—and how much training will pilots receive, given the shifting fuel costs of the next two decades?¹⁸

All enemies do not wage the same type of war, and how an enemy chooses to fight significantly affects how Airmen can use their technology to confront that foe. Continued evolutions in the character and conduct of war have generated an amorphous type of conflict that Gen Rupert Smith calls “war amongst people,” which “reflects the hard fact that there is no secluded battlefield on which armies engage, nor are there necessarily armies, definitely not on all sides.” Smith contends that in such wars “civilians are the targets, objectives to be won, as much as an opposing force.”¹⁹

Frank Hoffman’s notion of “hybrid warfare” parallels Smith’s view of future combat. In hybrid warfare, distinctive categories of conflict, such as conventional and irregular, blur together. This blending includes “the convergence of the physical and the psychological, the kinetic and the non-kinetic, and combatants and noncombatants.”²⁰ Colin Gray, Max Boot, Robert Gates, Michèle Flournoy, and Shawn Brimley echo Hoffman’s concern that hybrid wars will present special challenges in the years ahead for Western militaries geared toward confronting separate types of conflict.²¹ Such wars can be waged by state or nonstate actors, and they will present dilemmas for Airmen who must decipher the myriad approaches that an enemy may take to negate an airpower advantage.

For potential opponents with limited resources, the enormous costs associated with developing and maintaining an air force may cause some of them to concede control of the sky. Yet others may choose to focus on relatively inexpensive—compared to the cost of fourth- or fifth-generation fighters—ground-based defenses, as well as such “old-fashioned” methods of thwarting airpower as dispersal, camouflage, and concrete. In addition, as conflicts in Iraq, Afghanistan, Lebanon, and Gaza have illustrated, an enemy can turn to asymmetric techniques to thwart airpower, or it can respond with its own version of an air offensive. In addition to firing more than 4,000 rockets, Hezbollah fought back against the Israelis in 2006 by launching three Mirsad-1 unmanned aerial vehicles (UAV) that carried 50-kilogram bombs, plus it fired C-802 Noor cruise missiles against an Israeli ship.²² Less expensive technology also has a great deal of attraction for those who might wage hybrid wars, and such “proven” methods of attack as improvised explosive devices (IED) and suicide bombers will likely continue.

Airpower’s best option for helping to cope with such strategies will be to improve intelligence, surveillance, and reconnaissance (ISR) techniques—not kinetics. The problem with using bombs against hybrid enemies is friction:

the lack of certainty, even with incredibly accurate precision capabilities, that the bombs will hit the desired target—and only the desired target—or that the target struck is indeed the correct one. As the Israelis learned in Lebanon in 2006 and have confirmed in Gaza this year, a savvy opponent is not going to launch attacks from remote, isolated areas. Collateral damage provides a great boost when it comes to thwarting airpower, and that truism is not going to disappear in the next two decades. The 24-hour news coverage provided by media giants such as CNN, the BBC, and Al Jazeera is tailor-made for displaying civilian deaths to the world at large. Hezbollah units fighting the Israelis in 2006 assured that camera crews tagged along with them, so that reporters with laptops and cameras could send broadband transmissions of alleged bombing mistakes to appear on television broadcasts within minutes. Hezbollah further relied on sympathetic bloggers, self-generated e-mail, and its own satellite TV station to convey its views around the globe.²³ The Israelis have tried to limit Western reporting from Gaza in 2009, but Al Jazeera has furthered the Hamas cause with a dedicated channel of war coverage on YouTube and a Twitter feed that references Internet war updates.²⁴ Future combatants who shift back and forth between conventional and irregular techniques will continue to rely on such “information warfare” methods to stymie air attacks.²⁵

Complicated struggles like those in the Middle East show just how important an understanding of passion, reason, and friction are for Airmen. Such hybrid conflicts are a near certainty in the future because they afford weaker opponents key advantages when they attempt to compete against larger, better-equipped adversaries. Airmen will find themselves seeking the utmost in precision capability, whether bombs are used for close air support or for targeting “high value” enemy leaders, in what will become an increasingly complex combat environment. The US Air Force is working on a second variant of its 250-lb small-diameter bomb that could engage moving targets in all weather conditions and is also designing a low-cost miniature cruise missile that either F-22s or F-35s could carry internally.²⁶ Yet such munitions, especially those guided by GPS, are vulnerable to jamming from a plethora of inexpensive devices that an enemy could readily acquire. The Pentagon is developing antijamming systems, but the “measure-countermeasure” race offers no guarantees regarding which side will have the technological edge once combat occurs.

Moreover, as America’s eight-year struggle in Southeast Asia exemplified, a vast technological superiority in the precise application of lethal

force is no guarantee of victory. Airmen must identify the character and conduct of the war that they encounter and choose their technological tools accordingly. They must further understand the elements comprising the enemy's "Trinity of War" and how those constants may negate the weapons systems they have at their disposal. In the amorphous conflicts they will most likely face in the future, firepower, no matter how precise, is unlikely to yield the success necessary to secure the war aims sought—and in some cases it may well produce the antithesis of the desired effects. Vietnam stands as a stark reminder—and warning—that sophisticated weaponry is not an approved solution against a highly motivated, resourceful opponent who chooses to fight in unconventional ways.²⁷

Airpower's nonlethal applications, such as surveillance and reconnaissance, provide greater help in defeating enemies waging predominantly guerrilla war than a reliance on kinetics. Northrop Grumman has begun tests on airborne radar that can track individuals as they leave vehicles to plant roadside bombs. Known as "VADER", for Vehicle and Dismount Exploitation Radar, it will fit on the US Army's Sky Warrior UAV and ultimately go to the Beechcraft King aircraft flown by the Iraqi air force.²⁸ Besides its use against IEDs, the radar also offers value as a border surveillance device.

Such developments increase the likelihood that UAVs will form the key component of surveillance and reconnaissance activities against opponents relying on guerrilla techniques in the decades ahead. Of the 93 new aircraft requested by the US Air Force for 2009, 52 are UAVs,²⁹ and the emphasis on unmanned surveillance aircraft is not likely to abate. As Sir Brian Burridge observed, UAVs are perfectly suited to airpower's "3D Tasks"—those that are "dull, dirty, and dangerous."³⁰ The Air Force's MQ-1 Predator amassed 150,000 flight hours in Iraq and Afghanistan during a 14-month stretch from June 2007 to August 2008, compared to 250,000 hours that the Predator had accumulated in mid-2007 after 12 years of operation! As of September 2008, the Predator force of 165 aircraft averaged a combined total of 14,000 flying hours a month, a number that is certain to increase along with the demand.³¹

UAVs like Predator do not come without concerns, however. The rapid surge in their numbers has caused the US Air Force to discard the restriction that only rated pilots can fly them,³² which could diminish the situational awareness of some operators.³³ The rise in UAV numbers has also created command and control problems in an increasingly congested aerial environment. In the US command structure, the joint force air component commander (JFACC),

typically an Air Force officer, would prefer to control all such vehicles, but the Army and Marines have their own UAVs, many of which are quite small and designed for platoon-sized operations. They are unlikely to relinquish their control any time soon.³⁴ In addition, the Air Force has taken to arming the Predator and its larger counterpart, the MQ-9 Reaper, with Hellfire missiles and has suffered the same problems of collateral damage as it has from manned aircraft firing precision-guided weapons. For Predator to be a true asset in combating enemies who prefer to fight “amongst the people,” the information that it provides needs to be paired with a command and control structure appropriate to the kind of war being fought. The only time that it should act as a bombing platform is when the target that it has identified is clear, unequivocal, and isolated.

In future wars against opponents who fight from civilian landscapes, nonlethal airpower in the form of ISR will likely prove a great asset, and so too will airlift. Air transport can move troops to key locations; the pairing of special operations forces with helicopters or C-130s has emerged as a hallmark of the war in Afghanistan. Moreover, in such wars for “hearts and minds,” airlift can often provide humanitarian assistance for the ill or impoverished, the material necessary to build key elements of infrastructure, and a means to establish essential links to government centers that ground transport cannot fulfill. To help satisfy those needs, Lockheed Martin is developing an advanced composition cargo aircraft, which will have a fuselage crafted from composite materials with many fewer parts than today’s aircraft.³⁵ This technology will also support the design of the advanced joint air combat system, or AJACS, a projected replacement for the venerable C-130 in the 2020 time frame. The US Air Force currently possesses 435 C-130s (the oldest of which date to 1962), 176 C-17s, and 111 C-5s (with more than half dating from the 1970s),³⁶ which, along with its tanker force, give the United States a truly global capacity to move military personnel and equipment at a moment’s notice. If the United States is to maintain that capability, it must begin to think about—and organize itself for—joint and interagency operations beyond just kinetics.

Despite the emergence of hybrid wars, conflicts with a conventional focus are unlikely to disappear completely in the future. Against enemies that stress conventional war-fighting techniques, airlift and ISR will remain crucial capabilities for a nation relying on airpower, though the emphasis would likely shift to air components that apply lethal force directly. Indeed, as Colin Gray has observed, in “regular, conventional war” scenarios,

airpower will be the dominant force, with ground power playing a supporting role.³⁷ Robert Pape agrees, and has noted that air forces will provide a precise “hammer” to strike the “anvil” that friendly ground forces create by halting enemy movement.³⁸ Such conflicts would seemingly suit fifth-generation fighters like the F-22, which has thus far sat out the fighting in Iraq and Afghanistan. Hinting at China, former USAF chief of staff, Gen T. Michael Moseley, warned in December 2007 that the United States might one day confront “rising peer competitors with voracious appetites for resources and influence.”³⁹

Yet even with the continued modernization of weaponry by both the Chinese and Russians, to include plans for their own fifth-generation fighters, the prospect of direct conflict in the years ahead between the United States and allies against either the Chinese or Russians is remote. Besides the obvious threat of nuclear escalation, other factors limit the chances for conventional combat. The Chinese own almost 15 percent of America’s \$10 trillion national debt and have continued to purchase US treasury bonds during the current market downturn.⁴⁰ The ties that forged the economic powerhouse dubbed “Chimerica” by Niall Ferguson are unlikely to loosen in the years ahead; the combination of China’s demographic imbalance, environmental degradation, and political corruption decreases prospects that its manufacturing sector will shift its focus from exporting consumer goods to America.⁴¹ In short, the Chinese would probably not wish to sabotage their own financial health by conventional combat with the United States. The Russians, despite their bluster, would probably not wish to engage in a war that could pit them against all of NATO and threaten their oil and natural gas sales to many of the alliance nations, particularly those in Western Europe.⁴²

These uncertainties complicate strategic force design, but just because overt conflict with China or Russia may seem unlikely does not mean that the United States or its allies will avoid systems developed by those countries in future wars. The Chinese have developed the sophisticated Chengdu J-10 fighter, which will be a formidable opponent for many aircraft with its PL-12 radar-guided, air-to-air missiles. The Russians have made a strong pitch to sell their “generation 4.5” MiG-35 worldwide, and appear to have the inside track in the six-nation competition for 126 multirole fighters to outfit the Indian air force.⁴³ The Russians further plan to have their fifth-generation Sukhoi T-50 operational by 2013 and to sell it on the open market.⁴⁴ Some nations may prefer the Chengdu and

its estimated price tag of \$25–40 million, which is relatively inexpensive compared to the existing competition, including an upgraded F-16.⁴⁵ In the realm of ground-based air defenses, Russia's newest surface-to-air missiles have established reputations as effective weapons, and many countries, including China and Iran, possess them.⁴⁶

While an air-to-air showdown between either China or Russia and the United States is unlikely, such a confrontation could well occur in space or cyberspace. In 2000, a Chinese military strategist referred to America's dependence on space assets and information technology as "soft ribs and strategic weaknesses,"⁴⁷ and the Chinese have responded with extensive efforts in those arenas. They revealed an ability to "paint" American satellites with ground-based lasers in August 2006.⁴⁸ In early 2007, the Chinese demonstrated an effective antisatellite capability by firing a ground-based medium-range ballistic missile that hit one of their aging weather satellites.⁴⁹ That capability is a direct threat to American satellites monitoring daily activities such as financial transactions, power grids, and telephone communications, as well as those providing GPS data to smart munitions. A significant loss of satellites would have a profound impact on America's ability to provide air support to Taiwan should war with China occur there. Still, for the Chinese to risk war with the United States over the sovereignty of Taiwan—much less over downed satellites—runs counter to logic that the Chinese have displayed in a nonviolent march towards regional hegemony.⁵⁰ A more plausible way for them to check America's military might is to attack through cyberspace—a means that is difficult to pinpoint with absolute certainty—as they demonstrated by hacking Pentagon computers in June 2007.⁵¹ The Russians may have followed suit in November 2008 in a cyber attack that affected computer networks within US Central Command as well as the Pentagon.⁵² More attacks are likely.

China, Russia, and the United States are unlikely to fight each other directly any time soon, but "state vs. state" warfare still remains a distinct possibility for much of the globe, with airpower playing a substantial role. Should war occur without one of those three powers, their equipment would probably still dominate any battle for control of the sky. Russia recently offered to provide Lebanon with 10 MiG-29s.⁵³ Yet in the future, many nations that relied on Russian aircraft in the past will have opted for American designs. Romania, Poland, and Morocco now fly F-16s, and—no surprise—Iraq and Afghanistan have also purchased American aircraft. The UK, Italy, Australia, Canada, Denmark, the Netherlands, Norway, and

Turkey will all possess the F-35,⁵⁴ and the odds are high that Israel, Singapore, Japan, Greece, Spain, Romania, and Bolivia will as well.⁵⁵ To help keep production lines open for the F-16 and C-17, America has boosted foreign military sales,⁵⁶ and a similar goal could cause Lockheed Martin to seek approval to sell the F-22 to additional allied nations, especially in the current period of economic uncertainty. The United States has increased its status as the world's major arms supplier, and, in the airpower realm, that trend will continue as states flock to buy precision-guided munitions and missile-defense systems as well as aircraft. Such high-tech splurges have grave ramifications, though, because foreign leaders may feel inclined to use the new hardware to guarantee a "bang for their buck" rather than have it sit dormant. In a world of ever-emerging threats, matched by old animosities that refuse to disappear, the prospect that technological fanaticism may fuel the impetus for war is a scary possibility.⁵⁷

Having high-tech airpower seemingly available to settle old scores or beat down new foes is dangerous because it affects the "reason" aspect of Clausewitz's trinity. The head of state who accepts the frequently touted progressive mantra that airpower makes wars cheaper, quicker, and more efficient than land or sea forces may turn to bombing to achieve political goals deemed unobtainable with armies or navies.⁵⁸ Other leaders may view the acquisition of airpower as a goal unto itself, much like a fleet-in-being that would provide regional clout and deter potential opponents. In either example, airpower has the potential to alter the character of war by expanding the political goals desired and reducing the manpower needed to achieve them. The combination of airpower and nuclear weapons, seen today in North Korea with similar prospects for development in Iran, would further transform the character of war if conflict occurred with one of those two outlier states.

Opposing such an enemy would be anything but simple, and airpower would likely provide the dominant element of force. Much like China or Russia, North Korea would present any nation considering the use of lethal airpower against it with difficult choices because of the potential for nuclear retaliation. Iran could present a similar dilemma, depending on whether it had perfected a nuclear weapon before an attack against it occurred.⁵⁹ In either case, ISR technology would play a vital role, especially in terms of the information received from satellites that can now distinguish objects as small as 16 inches from 420 miles above the earth's surface.⁶⁰ Yet equally, if not more, important would be the intelligence

gleaned regarding the *intentions* of those leaders who possess the bomb. Simply knowing the locations of nuclear facilities and assuring their destruction would not suffice to achieve *lasting* results. Enduring success would require deciphering the specific war aims sought by enemy leaders and containing the religious or ideological fervor that could affect their logic as they direct their forces.

Moreover, such a conflict would demand not only pristine intelligence that guaranteed the location and destruction of all nuclear facilities *before* catastrophic harm occurred, but also the epitome of precision bombing to assure that catastrophic harm did not result from the very effort designed to prevent it. As Bernard Brodie observed a half-century ago, a people irradiated by collateral damage would probably not be too grateful for their salvation from nuclear attack.⁶¹ Any application of kinetic airpower would receive intense scrutiny, and the nations that use it must be ready for the repercussions. World public opinion will offer various assessments, with certain ethnic, religious, or ideological groups perhaps using the attacks as impetus for their own future activities. World leaders will also make their own judgments regarding the impact of the air strikes. Those who seek nuclear weapons will pay special attention to airpower's perceived ability to forestall that development and may well act on their evaluations.

Although a rogue state's pursuit of a nuclear arsenal may trigger an air war in the years ahead, combat applications of airpower are more likely to stem from "traditional" efforts to change or preserve national borders. Russia's incursion into Georgia provides a recent example of a "conventional" display of airpower that will likely continue in the next two decades; NATO air strikes in Bosnia in 1995 and Serbia in 1999 provide more distant episodes. For two nations that both possess substantial air forces and a contentious border area, such as India and Pakistan, the prospect that a conflict could occur is ever present and especially ominous because both nations have nuclear arsenals. An air war there will remain a possibility, and should it occur, one has to hope that the reason aspect of the Clausewitzian trinity dominates emotion.

Airpower's ability to prevent nuclear devastation stands as its greatest challenge in the decades ahead. In that respect, changes in the character and conduct of war stemming from the potential proliferation of nuclear weapons to terrorists emerge as the thorniest test for future air commanders. As with a potential war against a nuclear North Korea or Iran, ISR assets must generate key data, but will the information provided suffice, or will

it overload the system—and, if the necessary information is gleaned, will it receive the correct interpretation? How will the leaders of the threatened nations *act* on the information received? Unlike most nation-state leaders, true terrorists are likely to be much more difficult to deter—if indeed deterrence is an option. Locating them and their nuclear device—or devices—and determining the means of delivery are essential to thwarting an attack. Airpower's odds of success are highest if the delivery method is via ballistic missile, because the most means would exist to stop it: an air strike wrecking the launch site or the missile's destruction by a surface-based defense system or airborne laser, all are possibilities. Thus, terrorists would likely seek an alternative delivery method. Should they resort to a cruise missile, container ship, or suitcase, ISR's importance becomes paramount, although human intelligence would probably be just as significant, if not more so. If those techniques yield the location of terrorist weapons, the leaders of the targeted nations would likely face a grave dilemma in determining how to respond. An air strike would be one possibility, but that option might carry with it the prospect of significant collateral damage, to include radiation. Yet, should intelligence pinpoint the location of the terrorists and their nuclear weapons, an air strike may be deemed the best option available.

Today's terrorists have demonstrated a solid appreciation for the principles of airpower; the 9/11 attacks were vintage examples of Douhet's prescription for striking the capability and will of an enemy state. Commercial airliners, cruise missiles, Scuds, and rockets provide potential terrorists with a "poor man's air force" capable of wreaking substantial havoc. Stopping such air strikes will not be easy, even for nations possessing sophisticated air defenses. In these asymmetric clashes of airpower, the side that possesses the dominant technology may not have the decisive edge.

What then can we say with certainty regarding the impact of change on airpower in the next two decades? In terms of specifics, we can say little with assurance. Yet, in general terms, we can offer a few observations. First, airpower and change will continue to have a symbiotic relationship—changes in the character and conduct of war will affect airpower effectiveness, and airpower developments will induce change in the character and conduct of war. Second, technological change is likely to yield an airpower advantage for only a brief period of time. Human beings are innovative creatures with remarkable abilities to counter threats, and the ever-expanding resources of a globalized world will multiply their prospects for doing so in the future.⁶² Finally, the developments that facilitate control of the sky

should benefit the nation that uses them to that end, but command of the air does not guarantee success.

Almost 90 years ago, Douhet argued that such control equated to victory. He envisioned only one type of war, however—a total struggle for unlimited aims. War's character and conduct have continued to evolve, and the changes stemming from that evolution will profoundly affect airpower's utility in the decades ahead. "Victory smiles upon those who anticipate the changes in the character of war," Douhet wrote in 1921, "not upon those who wait to adapt themselves after the changes have occurred."⁶³ His guidance on that score offers sound advice for twenty-first-century air commanders—provided that they also have a full appreciation for the nature of the war on which they are about to embark. **SSQ**

Notes

1. US Joint Forces Command, *The Joint Operating Environment 2008: Challenges and Implications of the Future Joint Force*, 25 November 2008, <http://www.jfc.com.mil/newslink/storyarchive/2008/JOE2008.pdf>.
2. Carl Builder observed that the US Air Force "could be said to worship at the altar of technology," an assessment that likely reflects the focus of many officers in air forces worldwide. See *The Masks of War: American Military Styles in Strategy and Analysis* (Baltimore: Johns Hopkins University Press, 1989), 19. In a brief, thoughtful essay, Lt Col Paul Berg amplifies the emphasis that American Airmen place on technological advance. See "Doctrine and Technology," *Air and Space Power Journal* 22 (Spring 2008): 20.
3. Despite being written almost a decade ago, Dennis M. Drew's "The Essence of Aerospace Power: What Leaders Need to Know," *Aerospace Power Journal* 15 (Summer 2001): 23–31, remains an excellent guide for those grappling with how best to apply airpower to achieve political effects.
4. Carl von Clausewitz, *On War*, ed. and trans. by Michael Howard and Peter Paret (Princeton, NJ: Princeton University Press, 1976), 605.
5. Ibid., 89.
6. Ibid., 88–89.
7. Ibid., 579.
8. Jack Sine, "Defining the 'Precision Weapon' in Effects-Based Terms," *Air and Space Power Journal* 20 (Spring 2006): 81–88, provides a representative example of the emphasis given "effects based" airpower. For an engaging debate on the utility of the term *effects-based*, see P. Mason Carpenter and William F. Andrews, "Effects-based Operations: Combat Proven," *Joint Force Quarterly* 52 (Winter 2009): 78–81; and Paul K. Van Riper, "EBO: There Was No Baby in the Bathwater," *Joint Force Quarterly* 52 (Winter 2009): 82–85.
9. Michael C. Sirak, "By the Numbers," *Air Force Magazine Online Daily Report eNewsletter*, 5 February 2008, <http://www.airforce-magazine.com/Features/modernization/Pages/box020408budget.aspx>.
10. Ibid.
11. Marc V. Schanz, "The Fuel War," *Air Force Magazine*, June 2007, 47.
12. Sirak, "By the Numbers."

13. Dan Ritschel, Michael A. Greiner, Daniel E. Reynolds, and Michael J. Seibel, "Flyaway Costs Versus Individual Components of Aircraft: An Analysis," *Air Force Journal of Logistics* 27 (Winter 2003): 32.
14. Amy Butler and David A. Fulghum, "Fate of F-22, C-17 Lines Uncertain in Fiscal Year 2009," *Aviation Week and Space Technology*, 10 February 2008, http://www.aviationweek.com/aw/generic/story_generic.jsp?channel=awst&id=news/aw021108p2.xml&headline=Fate%20of%20F-22,%20C-17%20Lines%20Uncertain%20in%20Fiscal%202009; Pierre Sprey, James Stevenson, and Winslow Wheeler, "The F-22: expensive, irrelevant, and counterproductive," *Fort Worth Star-Telegram*, 27 January 2008; Amy Butler, Graham Warwick, and Andy Nativi, "Cost Question," *Aviation Week and Space Technology*, 14 July 2008, 86; and John A. Tirpak, "Bets Down on Lightning II," *Air Force Magazine*, July 2008, 27. Unit costs of the F-35 are especially difficult to determine at this juncture. The contract for the second lot of low-rate initial production aircraft was announced on 22 May 2008 as \$2.2 billion for 12 aircraft, and Maj Gen Charles R. Davis, USAF the F-35 program manager, noted in April 2008 that "every day we get more actuals [real costs] on what it takes to build an airplane. We also get better every time we build an airplane. It gives us a better understanding of what jets and later lots will cost." See Tirpak, "Bets Down on Lightning II," 28. The *Washington Post* reported that Congress had approved \$6.3 billion for 14 F-35s in FY-2009, which would include funding for a small number of each of the models desired by the various services—the short take-off/vertical landing model F-35B desired by the Marine Corps; the larger, aircraft-carrier-capable F-35C desired by the Navy; and the F-35A "standard" model sought by the Air Force. Those figures, however, likely include research and development costs in addition to the costs to build individual aircraft. See Dana Hedgpeth, "Balancing Defense and the Budget," *Washington Post*, 13 October 2008. Ultimately, the Air Force plans to buy 1,763 F-35As, which would produce a "ballpark" flyaway cost of \$60–70 million per aircraft, while costs for the B and C models would run \$80–85 million apiece. See Tirpak, 25, 29.
15. The trend truly began in the 1970s. First, Britain and France combined to produce the Jaguar, and then Britain, Germany, and Italy produced the Tornado. Next, Britain, France, and Germany began work on the Eurofighter, which first flew in 2000 after France had dropped out of the project and Spain and Italy had joined in. See Tony Mason, *Air Power: A Centennial Appraisal* (London: Brassey's, 1994), 246.
16. "Russia Starts Building Fifth-Generation Fighter Aircraft," *Moscow News*, 13 December 2007, <http://www.mnweekly.ru/news/20071213/55296954.html>; and "US, Russia, China in Dogfight Over Jet Sales," *Moscow News*, 27 March 2008, <http://www.mnweekly.ru/business/20080327/55319264.html>.
17. Air Vice-Marshal Tony Mason made this point in 1994, and it remains equally valid for the decades ahead. See Mason, *Air Power*, 267–68.
18. Through 2013, the US Air Force Flying Hour Program Budget is scheduled for a 10-percent reduction each year, and fuel costs are a major reason for the decline. See Schanz, "The Fuel War," 47.
19. Rupert Smith, *The Utility of Force: The Art of War in the Modern World* (New York: Alfred A. Knopf, 2005, 2007), 5–6.
20. Frank G. Hoffman, "Hybrid Warfare and Challenges," *Joint Force Quarterly* 52 (Winter 2009): 34.
21. Colin S. Gray, *Another Bloody Century: Future Warfare* (London: Weidenfeld & Nicolson, 2006), 168–69, 199–200; Max Boot, *War Made New: Technology, Warfare, and the Course of History, 1500 to Today* (New York: Gotham Books, 2006), 472; Robert M. Gates, "A Balanced Strategy: Reprogramming the Pentagon for a New Age," *Foreign Affairs* 88 (January–February 2009): 33–35; and Michèle Flournoy and Shawn Brimley, "The Defense Inheritance: Challenges and Choices for the Next Pentagon Team," *Washington Quarterly* 31 (Autumn 2008): 63–66.

22. Andrew Exum, *Hizballah at War: A Military Assessment*, Policy Focus #63 (Washington, DC: Washington Institute for Near East Policy, December 2006), 5–7.
23. Marvin Kalb and Carol Saivetz, “The Israeli-Hezbollah War of 2006: The Media as a Weapon in Asymmetrical Conflict,” 18 February 2007, http://www.brookings.edu/-/media/Files/events/2007/0217islamic%20world/2007islamforum_israel%20hezb%20war.pdf. See also Sanu Kainikara and Russell Parkin, *Pathways to Victory: Observations from the 2006 Israel-Hezbollah Conflict* (Tuggeranong, Australia: Air Power Development Centre, 2007), 77, 82–83; and Stephen Biddle and Jeffrey A. Friedman, *The 2006 Lebanon Campaign and the Future of Warfare: Implications for Army and Defense Policy* (Carlisle, PA: Strategic Studies Institute, 2008), 50–56.
24. Noam Cohen, “Few in U.S. See Jazeera’s Coverage of Gaza War,” *New York Times*, 12 January 2009.
25. Military analyst Bill Arkin notes: “The ‘failure’ of airpower in the 2006 Israel-Hezbollah war was not that it promised too much or that it did not deliver. It was instead a grand strategic failure in the application of force against terrorism. The war demonstrates and justifies a clear transition needed from conventional to wholly new modes of warfare required for counterterrorism in the future.” See William M. Arkin, “Divine Victory for Whom? Airpower in the 2006 Israel-Hezbollah War,” *Strategic Studies Quarterly* 1 (Winter 2007): 131. Arkin’s article is adapted from his book, *Divining Victory: Airpower in the 2006 Israel-Hezbollah War* (Maxwell AFB, AL: Air University Press, 2007).
26. Douglas Barrie, Amy Butler, and David A. Fulghum, “Sound and Fury,” *Aviation Week and Space Technology*, 14 July 2008, 116–20.
27. See Mark Clodfelter, *The Limits of Air Power: The American Bombing of North Vietnam* (Lincoln: University of Nebraska Press, 2006).
28. Graham Warwick, “No Hiding Place,” *Aviation Week and Space Technology*, 28 July 2008, 62.
29. Sirak, “By the Numbers.”
30. Sir Brian Burridge, “Trenchard Memorial Lecture,” 17 September 2004, in *Royal Air Force Air Power Review* 8 (Spring 2005): 7.
31. “Grinding It Out,” *Air Force Magazine Online Daily Report eNewsletter*, 20 August 2008, <http://www.airforce-magazine.com/DRArchive/Pages/2008/August%202008/August%2020%202008/GrindingItOut.aspx>.
32. “Rated to Fly,” *Air Force Magazine Online Daily Report eNewsletter*, 17 September 2008, <http://www.airforce-magazine.com/DRArchive/Pages/2008/September%202008/September%2017%202008/ReadytoFly.aspx>.
33. US Air Force studies show that many UAV pilots suffer from “sensory exhaustion,” a problem of chronic fatigue that results from the lack of sensory cues received while remotely controlling aircraft thousands of miles away. See Aaron Retica, “Drone-pilot Burnout,” *New York Times*, 14 December 2008.
34. The debate between the US Army and the US Air Force over command and control of UAVs has at times been contentious. See “Sooner, Not Later,” *Air Force Magazine Online Daily Report eNewsletter*, 22 June 2007, <http://www.airforce-magazine.com/DRArchive/Pages/2007/June%202007/June%2022%202007/1090sooner.aspx>. While some progress has been made in specifying “who owns what,” problems still remain. See “UAV Deconfliction Moving Ahead,” *Air Force Magazine Online Daily Report eNewsletter*, 17 December 2008, <http://www.airforce-magazine.com/DRArchive/Pages/2008/December%202008/December%2017%202008/UAVDeconflictionMovingAhead.aspx>.
35. Amy Butler and Graham Warwick, “Cargo Composites,” *Aviation Week and Space Technology*, 14 July 2008, 122.
36. US Air Force Fact Sheet, “C-130 Hercules,” September 2008; US Air Force Fact Sheet, “C-17 Globemaster III,” September 2008; US Air Force Fact Sheet, “C-5 Galaxy,” April 2008.

37. One might add: "at least in the short term." See Colin S. Gray, "Understanding Airpower: Bonfire of the Fallacies," *Strategic Studies Quarterly* 2 (Winter 2008): 57–61.
38. Robert A. Pape, "The True Worth of Air Power," *Foreign Affairs* 83 (March–April 2004): 116–20.
39. Gen T. Michael Moseley, "The Nation's Guardians: America's 21st Century Air Force," CSAF White Paper, 29 December 2007, 3.
40. James Fallows, "The \$1.4 Trillion Question," *Atlantic*, January–February 2008, <http://www.theatlantic.com/doc/200801/fallows-chinese-dollars>; *Report to Congress of the U.S.-China Economic and Security Review Commission*, November 2008 (Washington, DC: US Government Printing Office [GPO], 2008), 2–5; Mark Landler, "Chinese Savings Helped Inflate American Bubble," *New York Times*, 26 December 2008; and Keith Bradsher, "China Loses Taste for Debt From U.S.," *New York Times*, 8 January 2009. At the end of November 2008, the Chinese owned \$585 billion of the US Treasury's \$4.4 trillion debt, more than any other foreign nation; that total had climbed to \$652 billion by the end of December.
41. Niall Ferguson, "What 'Cbimerica' Hath Wrought," *American Interest* (January–February 2009), <http://www.the-american-interest.com/ai2/article.cfm?id=533&MId=23>. See also "Geopolitical Diary: Why China Needs U.S. Debt," *Stratfor*, 13 February 2009, http://www.stratfor.com/geopolitical_diary/20090212_geopolitical_diary_wby_cbina_needs_u_s_debt.
42. "Gas Wars," *Economist*, 10 January 2009, 12; and "Pipe Down," *Economist*, 10 January 2009, 44–45.
43. "MiG-35: Top Candidate for Air Force MRCA Deal," *india-defence.com*, 23 January 2007, <http://www.india-defence.com/reports/2831>.
44. "Russian Air Force may receive fifth generation fighter in 2013," *Russian News and Information Agency Novosti*, 7 July 2008, <http://en.rian.ru/russia/20080707/113422740.html>.
45. David Lague, "China builds a superpower fighter," *International Herald Tribune*, 8 February 2007.
46. These surface-to-air missiles include Russia's "S-300" series weapons, which comprise the SA-10, SA-12, and SA-20 missiles and their complementing radars, plus the follow-on "S-400" system weaponry. The SA-20 enables the defender to engage six targets simultaneously at a range of 248 miles, six times the range of the SA-6 that it replaced. Iran has purchased many of the S-300 series missiles, as have the Chinese. See John A. Tirpak, "The Double-Digit SAMs," *Air Force Magazine*, June 2001, 48–49.
47. Wang Huacheng, "The US Military's 'Soft Ribs' and Strategic Weaknesses," *Liaowang* 27, reprinted in *Xinhua Hong Kong Service*, 5 July 2000 in FBIA-CHI-2000-0705, 25 July 2000, cited in *Report to Congress of the U.S.-China Economic and Security Review Commission*, November 2008 (Washington, DC: GPO, 2008), 156.
48. "Chinese Anti-Satellite [ASAT] Capabilities," *GlobalSecurity.org*, <http://www.globalsecurity.org/space/world/china/asat.htm>.
49. Carin Zissis, "China's Anti-Satellite Test," Council on Foreign Relations backgrounder, 22 February 2007, <http://www.cfr.org/publication/12684/>.
50. The Chinese announced in their most recent National Defense White Paper: "The attempts of the separatist forces for 'Taiwan independence' to seek 'de jure Taiwan independence' have been thwarted, and the situation across the Taiwan Straits has taken a significantly positive turn. The two sides have resumed and made progress in consultations on the common political basis of the '1992 Consensus,' and consequently cross-Straits relations have improved." See Information Office of the State Council of the People's Republic of China, *China's National Defense in 2008* (Beijing: January 2009), 5–6.
51. Demetri Sevastopulo, "Chinese Hacked into Pentagon," *Financial Times*, 3 September 2007.

52. Julian E. Barnes, "Cyber-attack on Defense Department computers raises concerns," *Los Angeles Times*, 28 November 2008. The article noted that the attack "may have originated in Russia"; a Russian cyber attack shut down government computers in Estonia in 2007.
53. Robert F. Worth, "Russia, Testing U.S. Sway, Offers Lebanon 10 Warplanes," *New York Times*, 18 December 2008.
54. The Norwegian prime minister announced on 24 November 2008, after an evaluation of the F-35 against the Saab Gripen NG, that the F-35 is the "only candidate" that fulfills Norway's operational requirements. The Norwegians plan to acquire 48 F-35s to replace their F-16s, with the first deliveries planned for 2016. See "Count Us In," *Air Force Magazine Online Daily Report eNewsletter*, 25 November 2008, <http://www.airforce-magazine.com/DRArchive/Pages/default.aspx>. Similarly, Air Marshal Mark Binskin, chief of the Royal Australian Air Force, announced that his nation must buy 100 F-35s despite the shrinking defense budget, and that the F-35 would replace aging F-111s and F/A-18s. See "Aussies Confirm 100 is the Number," *Air Force Magazine Online Daily Report eNewsletter*, 4 December 2008, <http://www.airforce-magazine.com/DRArchive/Pages/default.aspx>.
55. Butler, Warwick, and Nativi, "Cost Question," 86. The Pentagon announced in October 2008 that it planned to sell between 25 and 75 F-35s to Israel. See "Pentagon Approves Israeli F-35 Sale," *Air Force Magazine Online Daily Report eNewsletter*, 3 October 2008, <http://www.airforce-magazine.com/DRArchive/Pages/2008/October%202008/October%2003%202008/PentagonApprovesIsraeliF-35Sale.aspx>.
56. Eric Lipton, "With White House Push, U.S. Arms Sales Jump," *New York Times*, 14 September 2008.
57. For a compelling analysis of how technological fanaticism can affect airpower development, see Michael S. Sherry, *The Rise of American Air Power: The Creation of Armageddon* (New Haven, CT: Yale University Press, 1987).
58. For a study of how America's wartime presidents, from Franklin Roosevelt to George W. Bush, embraced airpower's progressive notions, see Mark Clodfelter, "A Strategy Based on Faith: The Enduring Appeal of Progressive American Airpower," *Joint Force Quarterly* 49 (Spring 2008): 24–31, 150–60.
59. David Kay, the former UN inspector, contends that Iran is already "80 percent of the way to a functioning nuclear weapon." See "The Iranian Fallout," *National Interest* (September–October 2008): 1. The International Atomic Energy Agency reported in late November 2008 that Iran had produced enough nuclear material to make, with added purification, a single atomic bomb. See William J. Broad and David E. Sanger, "Iran Said to Have Nuclear Fuel for One Weapon," *New York Times*, 20 November 2008.
60. "High Resolution Satellite Launched in California," *International Herald Tribune*, 6 September 2008.
61. Bernard Brodie, *Strategy in the Missile Age* (Princeton, NJ: Princeton University Press, 1959), 324–25.
62. US Joint Forces Command, *Joint Operating Environment* 2008, 48, amplifies this point.
63. Giulio Douhet, *The Command of the Air*, trans. by Dino Ferrari (New York: Coward-McCann, Inc., 1942; reprint ed., Washington, DC: Office of Air Force History, 1983), 30.

Book Reviews

In Defense of the Bush Doctrine by Robert G. Kaufman. University Press of Kentucky, 2007, 251 pp., \$35.00.

The title of this monograph concisely predicts what the reader will find between the covers. Posed in scholarly language, the book describes and argues for an American grand strategy based on a concept the author calls “moral democratic realism.” He compares this concept to the “major alternative schools of foreign policy” that characterize the criticism aimed at Pres. George W. Bush’s foreign policy—primarily the administration’s approach to the global war on terrorism (GWOT) and Iraq in particular. However, Kaufman does not restrict his analysis to the Bush approach to foreign policy and merely answer current criticism about the GWOT. He gives readers an enlightening look at the Bush Doctrine through a broader historical lens, which encompasses US foreign policy since the founding of our nation and then extends his analysis to our ongoing and future policy around the globe.

A political scientist specializing in American foreign policy, national security, international relations, and various aspects of American politics, Dr. Kaufman is widely published and has impressive academic credentials. Currently an adjunct scholar at the Heritage Foundation, he has taught at the Naval War College, Colgate University, and the University of Vermont.

Kaufman makes the case for the Bush Doctrine and its proper conformity to moral democratic realism based on two premises. The first is that the basic purpose of American foreign policy has remained the same throughout our history—to assure the integrity and vitality of a free society ‘founded upon the dignity and worth of the individual.’ The second is that “prudence” ought to serve as the standard for judging American grand strategy. Throughout the book, he consistently goes back to these premises as he compares and contrasts different schools of thought.

His method for defending the Bush Doctrine lies in separating foreign policy thought into generalized academic categories—“isolationism, realism, and liberal multilateralism.” Kaufman uses the first half of the book to describe the broader historical context of American foreign policy and different theories of others. Rather than dismiss the isolationism advocated by contemporary critics like Pat Buchanan, he tackles the isolationists’ reasoning head on. He also critiques the neorealism of thinkers such as Kenneth Waltz or Stephen Walt and the classical realism of Hans Morgenthau and Henry Kissinger. Finally, he discusses the liberal multilateralism championed by Charles Kupchan and John Ikenberry and embraced by many Democratic politicians such as Senator John Kerry (D-MA). The remaining half describes moral democratic realism and examines that concept in

light of the “endgame of the cold war” as well as the ongoing war on terrorism and the US approach to foreign policy in other important arenas such as Korea.

While supporters of the Bush Doctrine may agree with Kaufman’s premise and conclusions, his defense sometimes seems like an attack against other viewpoints rather than a balanced analysis. The book may come across as too partisan, especially for Bush opponents at-large. I say this for two reasons. First is his tendency to simplify—almost stereotypically—arguments from other viewpoints to fit them into “schools of thought.” He often reduces an impressively large and diverse bibliography by picking out references that support his critique and rarely giving credit or consideration to points that may be of value elsewhere in the works from which he quotes. For example, in his first two chapters, he focuses on the classic national instruments of power, such as the use of force and economics, without even mentioning Joseph Nye’s concept of “soft power” until discarding its value in *any* circumstance, saying it is not effective in *all* cases. Second, in some sections, he seems to contradict his own arguments when criticizing someone else’s. For instance, in discrediting the neorealist preference for containment of Saddam instead of using force, Kaufman speculates that it would have been harder for bin Laden to gain support if we had eliminated Saddam in the first Gulf War and left no foreign troops in Saudi Arabia; but only two pages later, he argues that bin Laden and the Islamists fight for a universal Islamic empire across the world and their cause has little to do with US Middle Eastern policy and international behavior.

Although the book often comes across as political (which should be expected), I recommend it for those interested in military strategy and policy. Robert Kaufman does an excellent job examining the national decision-making environment which so frequently calls for the employment of our air, space, and cyberspace capabilities.

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Military Tribunals and Presidential Power: American Revolution to the War on Terrorism by Louis Fisher. University Press of Kansas, 2005, 279 pp., \$16.95.

Louis Fisher, a distinguished and prolific scholar at the Congressional Research Service, offers the interested reader a valuable study of military tribunals, placing them in very broad legal and historical contexts. Although it probes deeply into the legal aspects of tribunals, Fisher’s account is admirably suited for nonspecialists. The text concentrates on the core issues in military tribunals without allowing the intricacies of complicated legal arguments to dominate. As a result, this is a study of both form and substance.

The real questions, as Fisher demonstrates throughout the book, revolve around the core values of the American system of justice. Reversing the practice of the first seven decades of the nation’s existence, court decisions and executive action since the Civil War frequently have reduced these values to insignificance in a maze of pseudo-legal procedures and amazingly contrived arguments. Some reversal seems underway

in Fisher's view of more recent developments as of this study's completion. Although the book is really about the substantive questions involved in the long-term struggle between unrestrained presidential power and basic principles of fairness and decency in legal proceedings, its dissection of legal technicalities destroys any pretense that the law should or must of necessity be distorted if it is to deal with the kinds of problems that have emerged over the history of the republic.

At the risk of oversimplification, one might summarize Fisher's argument in a few basic propositions. Military tribunals (not to be confused with courts-martial) violate any sense of due process, make a mockery of the Anglo-American sense of justice, and dismiss inconvenient issues of civil liberties. They increasingly operate on presidential orders and use procedures that lack any foundation in statutes enacted by Congress, despite clear constitutional and legal requirements to the contrary. They have become a brutal tool of an interpretation of executive power that dismisses everything in conflict with the broadest possible view of the presidential powers under the limited "commander-in-chief" section of the Constitution. In the first years after the 9/11 attacks, the courts remained subservient to the executive branch. Even their most recent rulings in favor of some limits on executive authority seem "in many respects vague and contradictory," according to Fisher.

Fisher constructs and sustains this interpretation by presenting an impressive analysis of the issues involved and by placing tribunals in their legal and historical contexts. The basic supporting evidence consists of important court decisions and secondary literature of various kinds. He examines numerous cases from the early years of the republic, from the US Civil and Indian wars, from the world wars, and, most impressively, from the so-called war on terrorism. His comparison of Roosevelt's executive decisions on the treatment of German agents and the president's basic order of November 2001 is highly instructive on a number of points.

In the course of his narrative, Fisher clarifies a number of issues that might cause confusion in the minds of those who are not specialists in this subject. His careful distinctions among the Articles of War, the laws of war, the *Uniform Code of Military Justice*, presidential orders, and so forth illuminate many important aspects of the relationships among the president's and Congress' responsibilities, limitations, and powers. He establishes that the role of the courts in judging the propriety of efforts to use the military as a tool of executive policy depends primarily on the degree to which federal courts and the US Supreme Court wish to become involved and the extent to which they demur to presidential demands. Courts and the Congress, like herds of cows, may at times be stampeded in whichever direction the cowboy desires.

Although Fisher does not directly address the issue, his study suggests that presidents seem to prefer military tribunals (or commissions, perhaps a better term) because they draw upon an instrument (the military) that can be relied upon to enforce directives without questioning their validity. For example, there can be no doubt that the military will enforce a president's instructions without questioning whether the government really has the right to incarcerate American citizens arrested in the United States for indefinite periods in circumstances that deprive

them of all constitutional rights. The fact that such military obedience is the case, and the probability that this is as it should be, only reinforce the compelling necessity for Congress and the Supreme Court to reassert their constitutional powers and responsibilities.

As Fisher demonstrates, the courts have not always been so hesitant to apply the Constitution and federal laws to the military's use of tribunals and martial law. Andrew Jackson, as commanding general both in Louisiana (War of 1812) and in Florida, encountered determined judicial opposition, as did Winfield Scott in Mexico. Other commanding generals were openly contemptuous of judicial review, one going so far as to state that he would act upon a higher law, even if "by so doing my conduct should have the appearance of coming into conflict with the forms of law."

On the other hand, Fisher does not fail to note the courageous actions of a few military judge advocates in vigorously demanding respect for the law, for at least minimal fair play, and for their clients' rights. Those who become too involved with their clients face dangers, however, even if wrongdoing cannot be proven. In one related case, the military system, having failed to convict an officer on alleged but insupportable accusations of real crimes, resorted to its old standby substitute: attempting to prosecute on the charge of personal immorality.

All things considered, this book raises many significant issues—not merely of constitutional rights and the principle of separation of powers, but of civil-military relations as well. The founding fathers were correct: political power must be distributed, and the country must act to restrain presidents who would use their executive and military agencies to assume monarchical power.

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Bankrupting the Enemy: The US Financial Siege of Japan before Pearl Harbor
by Edward S. Miller. Naval Institute Press, 2007, 255 pp., \$22.40.

"Follow the money" is an investigative technique often used in criminal cases. Edward Miller, author of *Bankrupting the Enemy*, skillfully applies this concept to explore our relationship with Japan in the years prior to World War II; his book illuminates the crucial economic, commercial, and financial underpinnings of the conflict. Miller argues against the prevailing belief that the US oil embargo pushed Japan to attack Pearl Harbor. Certainly, Japan's army and navy depended on US fuel exports, and Japanese military leaders, effectively in control of Japanese policies, perceived the trade embargo as intolerable. Miller claims, however, that "the most devastating American action against Japan was the financial freeze."

On 26 July 1941, Pres. Franklin Roosevelt invoked a long-forgotten clause of the Trading with the Enemy Act of 1917 to impose a financial freeze on Japan, thereby isolating Japan economically from the outside world. Miller asserts, "A stroke of the pen rendered [Japan] illiquid." The American financial assault on Japan prohibited it from purchasing strategic goods in the United States or in any

country that exported for dollars. The financial strangulation effectively shriveled Japan's commercial sphere to the "yen block" of its colonies and conquered regions in East Asia, pinched off its source of dollars, and forced it to face the prospect of doing without strategic imports, an untenable situation considering its expensive military operations in China and elsewhere. Japan's strategic choices were to (1) suffer economic impoverishment, (2) accede to American demands to yield its territorial conquests, or (3) go to war against the United States and its allies.

Roosevelt had hoped to "bring Japan to its senses, not its knees," but Miller says that his intentions were thwarted by "opportunistic bureaucrats who maneuvered to deny Japan the dollars needed to buy oil and other resources for its economic survival." US officials discovered and seized a huge cache of dollars fraudulently hidden in the New York banking system. The book implies Roosevelt's policy was a miscalculation, not a deliberate policy to goad Japan into war. If Roosevelt's true intent was to avoid war, then his financial siege of Japan proved wildly unsuccessful, as it exacerbated rather than defused Japan's aggression.

Edward Miller, a former chief financial officer of a major international mining corporation and the US Synthetic Fuels Corporation, writes in an easy-to-read style. His first book, *War Plan Orange: The US Strategy to Defeat Japan, 1897–1941*, won five history awards. Miller's research is first rate, the book is well documented, and the chapters are well organized. His narratives capturing disagreements during the interagency bargaining over how the United States should implement financial and export controls is fascinating. Power over modern economic warfare has passed from those who controlled shipping to those who regulate money.

I found myself slightly bored, however, by one chapter that outlines and analyzes 16 Japanese export products and industries. The reader is treated to details on Japanese celluloid articles, shabby parts, toothbrushes, and a miscellany of wares, among others. At one point, Miller digresses into a discussion about the *Zeitgeist* theory of fashion. "In a fashion revolution, women of the Roaring Twenties abandoned traditional shoe-length skirts for short frocks, most famously the 'little black dress' of designer Coco Chanel. Hemlines rose to the knee in 1923, dipped briefly, then soared from 1926 to 1929. Flappers of the Jazz Age flaunted skirts inches above their rouged knees. Dresses were scanty above and below the waist and worn over light slips. A fashionable lady wore a mere two square yards of fabric versus six or eight worn by her mother and ten by her grandmother." The eventual point of this discussion is to link the cyclical nature of Japan's silk industry with its ability to obtain hard currencies from exports. Miller contends that "without the broad silk boom in the United States, it is unlikely that Japan could have purchased the British warships that sank the Chinese and Russian navies" in earlier wars.

The epilogue contains an interesting account of one Japanese official's legal defense against war crime charges. Koichi Kido, an adviser to Emperor Hirohito, argued that "strangling an island nation dependent on foreign resources was a method of warfare more drastic than physical force because it aimed at undermining national morale and the well-being of the entire population through starvation. A nation, he concluded, had the right to decide when economic and financial

blockade was an act of war that placed its survival in jeopardy." From the Japanese perspective, the US financial freeze was a lethal threat and an assault on the nation's very existence.

Unfortunately, books about finance, international trade, and economic analysis usually do not end up in the collections of many military professionals; *Bankrupting the Enemy* should. Strategists thinking through how best to integrate military and economic sources of power to achieve unity of effort can learn from this book. It is a superb historical examination of what caused the Japanese to attack the United States during World War II. Moreover, military professionals should note the truism expressed by Dr. Edward Pratt, chief of the Bureau of Foreign and Domestic Commerce, when he told Congress shortly after the United States entered World War I in 1917, "This war is to be won as much by dollars as it is by men and guns." Finance and the economics of war can be as important as airplanes, tanks, and ships to the outcome of a conflict.

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A Question of Balance: How France and the United States Created Cold War Europe by Michael Creswell. Harvard University Press, 2006, 238 pp., \$49.95.

Florida State University professor Michael Creswell's *A Question of Balance: How France and the United States Created Cold War Europe* examines a topic of considerable interest to scholars of Cold War politics and strategy as well as European integration—the contribution of France to the postwar European international order. In 1940, Nazi Germany cast France down from a position of world power to that of a virtual nonentity in the council of nations. Yet, after World War II, France once again became an important actor by securing a seat on the Security Council of the United Nations, playing a leading role in European integration and exploding its own atomic bomb in 1960. The contribution of the French Fourth Republic (1947–1958) to this tale of resurgence has been contested by historians. At first it was viewed as an unfortunate prelude to the true work of resurgence undertaken by the Gaullist Fifth Republic (1958–present). It was blamed for both the loss of empire and the reduction of France to the status of an American puppet incapable of having its interests respected. Particularly important in this latter regard was the "German problem" (the status of defeated Germany within Europe). The French were seen as having been forced to swallow the rehabilitation and rearmament of Germany in the 1950s despite their misgivings.

With the opening of crucial private-paper collections and government archives in France to academic research, new works began to appear in the 1990s that challenged these earlier negative assessments of the Fourth Republic. In the first wave of this revisionism, the view that France was simply an American puppet, shorn of independent initiative in the international arena, was challenged. Instead, the indispensability of France to American Cold War plans and the leverage that this granted to the French was emphasized in works like Irwin Wall's *The United States and the Making of Postwar France* (1991). More recent works have been even more

enthusiastic in their endorsement of Fourth Republic international policy. William Hitchcock's *France Restored* (1998) broke new ground by maintaining that far from being a pawn in the Cold War, the France of the Fourth Republic was a key player, largely responsible for the shape of the Western Europe that emerged in the 1950s.

A Question of Balance continues this trend of positive reassessment. The focus of this international history monograph is the quarrel between the American and French governments over the rearmament and reintegration of West Germany into Western Europe in the 1950s. Only five short years after the end of the Second World War, with the Cold War reaching new heights of intensity following the beginning of the Korean War in June 1950, US Secretary of State Dean Acheson proposed to his NATO partners that West Germany should contribute troops to the alliance. What followed is familiar in its broad outlines. A reluctant France countered in October 1950 with a plan for a supranational army that would ultimately morph into the European Defense Community (EDC). Despite having proposed this plan after years of delay and indecision, the French National Assembly scuttled it in August 1954. Nonetheless, a few short months later the same national assembly endorsed the Paris Accords that permitted West Germany to supply troops to NATO.

Earlier historians have viewed this episode as a tale of French obstructionism that ultimately culminated in the triumph of American policy priorities. Creswell, however, seeks to put to rest definitively the view that France was forced by the United States to accept German rearmament against its will. Instead, he is careful to point out that given the military imbalance between Soviet and NATO forces in Western Europe, France's political and military leadership accepted the necessity of German rearmament. This was a dispute over its timing and character, not whether or not it should occur. Creswell persuasively argues that France's political leadership succeeded in compelling the Truman and Eisenhower administrations to accept *its* preferences for German rearmament. French decision makers were able to hold out until the conditions emerged that allowed them to accept German rearmament on their terms. Crucially, these included long-term Anglo-American military commitments to continental Europe and the assurance that France would maintain the military lead over its neighbor thanks to a prohibition against German possession of nuclear weapons (p. 6).

In a remarkable demonstration of concision, the author skillfully weaves together the French, American, German, and British dimensions of this complex tale into a short book. The result is a work which should at last put an end to the simplistic view that France's leadership in the 1950s opposed German rearmament all together and that French policy must be understood simply as a series of intricate maneuvers to avoid the inevitable. Instead, Creswell shows us that France's German policy was far more realistic, sophisticated, and ultimately successful than earlier works have argued.

One does wonder, however, if he overstates the triumph achieved by the Fourth Republic's international policy with the Paris Accords and the Western European

Union. It is certainly true that the French succeeded in delaying German rearmament until both its timing and its nature seemed more appropriate to them—although more by fumbling through than by conscious design. Nonetheless, one of the central dilemmas of French defense policy remained unresolved—the balancing of its European and overseas interests. As Creswell ably demonstrates, the French state's ability to ensure its military superiority over a rearmed Germany and thus remain the backbone of NATO forces in Europe (with all the political influence that would flow from such a position) was a central concern throughout the entire Pfeiffer Plan–EDC episode. The inability to do so while the Indochina War dragged on was often at the heart of the reluctance of the military leadership to embrace these defense integration schemes. With the Paris Accords and the creation of the Western European Union, France at last agreed that Germany would be permitted to form 12 divisions. Yet with the outbreak of the Algerian War on the heels of the Indochina War, France's ability to surpass this figure remained in jeopardy. Indeed, with French forces continuing to be diverted from Europe, the new *Bundeswehr* steadily replaced the French army as NATO's spearhead in Europe. Thus, at least in this one area, the timing of German rearmament still remained far from ideal for France.

The author draws his conclusions from an impressive archival foundation that runs to four pages in his bibliography. He has consulted all of the relevant government documents and private papers in France, the United States, Great Britain, Belgium, and Switzerland. This clearly written and exhaustively researched work clarifies the dizzyingly complex EDC affair. It is highly recommended to those interested in the early years of NATO, European integration, and American and French military and Cold War strategies in the 1950s. It shows that gone forever are the days in which Cold War Europe can be understood simply in terms of American designs and European resistance.

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A New Division of Labor: Meeting America's Security Challenges beyond Iraq
by Andrew R. Hoehn, Adam Grissom, David A. Ochmanek, David A. Shlapak, and Alan J. Vick. RAND Corporation, 2007, 112 pp., \$20.00.

Most of the wisdom we gather as we go through life is merely common sense. This monograph does a wonderful job of succinctly packaging simple truths into a very readable volume. *New Division of Labor* should be required reading for military leaders and civilian Department of Defense (DoD) policymakers. Have America's political and military leaders properly positioned the DoD to meet all of its security challenges as they pursue the national strategy of promoting freedom and democracy in all cultures?

In framing the debate, the authors systematically examine current force structure and doctrine and suggest keeping strategies and systems that work, while modifying or scrapping those that do not. Although this is a RAND Project Air Force publica-

tion, it delves equally into all services and addresses the joint service arena to discuss joint doctrine and force structure. The end of the Cold War and the impact of 9/11 changed the complexion of the military and its mission through three major forces shaping the security environment: (1) the new nuclear equation (North Korea and organizations such as the A. Q. Khan network), (2) the rise of China (both economically and militarily), and (3) terrorism and insurgency.

The force-shaping concept that emerged from the *Quadrennial Defense Review 2001* was known as “1-4-2-1,” where “1” is homeland defense, “4” represents four regions of the world where direct and indirect stability operations are expected to occur, “2” represents two major combat operations, and the final “1” portrays the one big conventional win and occupation of an adversary. The authors examine and revamp this construct to suggest a better model may be “1-n-2-1,” which indicates that all the services need to increase their abilities, training, and equipment to conduct direct and indirect stability operations in many areas instead of just four.

The Marines and the Army will be in the forefront for the new “n” portion of the equation because this mission essentially requires boots on the ground. High technology is a force multiplier, but conducting stability operations is a labor-intensive endeavor. With this increased demand for stability operations, the new Army must be structured to support conventional war-fighting capabilities while conducting stability operations and must be able to excel at both. History is replete with examples of this; for instance, winning World War II and subsequently rebuilding the economies of Europe and Japan—the authors do not use this example, but it seems relevant to the discussion.

Special operations units will be increasingly saddled with the task of defending against and defeating terrorists and insurgents. The authors call for increased training and cooperation between all the service components, especially the Marine Corps and the special ops community at large, which should be more closely linked to capitalize on their inherent strengths. Their expertise as trainers and advisors will be in high demand as enablers of indirect stability operations—equipping, training, and advising fledgling democratic regimes. Again, previous examples of these types of assistance abound in Vietnam and the Philippines. Success in these forays requires maintaining a low profile, building a competent, indigenous capability, and cultivating and winning the loyalty of the local population.

So what are the Navy and Air Force roles in this new model? The authors argue that USN and USAF capabilities represent strategic assets for power projection against traditional state adversaries, strategic agility, and global sustainment operations. The study even goes so far as to say that ground forces may or may not be needed in a confrontation with China or Iran. If that is the case, which is highly suspect, then the Navy and the Air Force would be positioned to carry out sustained conventional operations over long distances, often with very little time to plan or react. For the Air Force, long-range strike, airlift, and reconnaissance assets are a must with such uncertain basing options. The Navy must possess a fleet that can go both wide and deep—that is, do more than defend its carrier task forces. The key to

success will be the integration of air, space, and maritime power in force projection and global sustainment.

Chapter 4 is entitled “What Will it Mean to Be Joint?” One paragraph does an excellent job of answering that question:

In many instances, it will no longer suffice for forces simply to “deconflict” their operations on the battlefield—that is, for forces to ensure that they are not working at cross-purposes or, worse, attacking each other. Rather, there will be many cases in which planning, training, and actual employment of forces will need to be fully integrated to achieve the desired battlefield effects. Ultimately, commanders will aspire to extend this level of tactical integration to operations with allied and coalition partners.

With such a premium now on efficient use of manpower and equipment, the joint model has become necessary to reduce redundancy of effort and capability. Planning and executing all types of operations is more streamlined when strategic and tactical goals are integrated. The authors rightly uphold the model of Operation Enduring Freedom, which took full advantage of the joint model, as a template to be followed in future contingency planning.

The military, and to a larger extent the entire DoD, will be called upon to create the space for civil authorities to build institutions and infrastructure to foster freedom and democracy throughout the world. Each service will be required to expand or modify current roles and capabilities. Technology must not only continue to push into new frontiers to enhance the individual war fighter’s ability both to project power and to conduct stability operations but also to allow effective command and control of all aspects of force application. The authors conclude, and rightly so, that it will take both increases in technologies and cultivation of the human aspect of war fighting to make the new model successful. Although they could have leveraged historical precedent to a greater degree as a basis for advocating their “new division of labor,” this was an excellent monograph and does well as a primer for examining which direction the defense establishment should take to meet America’s security challenges beyond Iraq.

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Professional Integrity: Thinking Ethically by Michael S. Pritchard. University Press of Kansas, 2007, 195 pp., \$29.00.

When a professional falls in society and no one is around to hear, does he/she make an ethical sound?

The hole in the ethical atmosphere generated by corporate irresponsibility, spotlighted by Enron-like debacles, has left many pondering the cure for what appears to be the slow decline towards an ethically blind professional culture. What is the inoculation necessary to fight the outbreak of negative individual responsibility imposed on the collective responsibility of society? *Professional Integrity* is a philosophically

practical examination of the meta-ethical realm of professional responsibility—and quite possibly the answer to the question.

How do we become ethical professionals? How does ethical character develop within us? What is the function of disposition, perception, and imagination in our professional lives? Where is the emphasis in ethics—revelation or investigation? These questions and more are answered by Pritchard in this well-crafted examination of ethics. Peppered with quotes from Socrates, Plato, Thomas Reid, and Henry Sidgwick, he invites professionals to celebrate the perfect expression of professionalism—taking responsibility, grasping and honoring individualism. He weaves the wisdom of several of the world's greatest philosophers impressively with contemporary ethical concepts. The book is a well-facilitated, well-balanced inquiry from the lens of colleagues and practitioners from a broad range of disciplines. Reflections on practical ethical issues, shared “moral experiences,” and personal remembrances of professionals bypass the philosophical limitations of approaching ethics solely from the theoretical perspective. Though Pritchard makes clear in several places that this is by no means an algorithm for professionalism or ethical behavior, he does cover the gamut of ethical issues quite thoroughly without getting bogged down in idealistic details. The prose is engaging, and the examples are clear and matter-of-fact.

In the ongoing struggle for ethical harmony, there are those emerging professionals who sometimes become lost in the battle as they pinball the halls of codes, struggling to make it to the top. Pritchard addresses these members of society. He promotes creation of communities of inquiry and reflection in professions—communities laden with inspired curiosity, spurred by moral development and character education. Pritchard does not direct his endorsement to corporate issues solely but addresses the collective responsibility of individuals to become ethically and morally enlightened professionals and members of the world community. How wonderful would an environment and success rate be in professionalism capable of scoffing the scrutiny of media-ocracy?

This book is a pleasant departure from the standard look at ethics—Pritchard dissects “positive” ethics and the development of common morals throughout a professional’s lifespan—developing organic professionals from childhood. Pritchard chooses to shift the focus from what not to do, “wrongdoings” in ethics, to what should be done, the “right-doings.” He admits that some may think he ends the book where it should begin, but Pritchard chooses to ease up to his theme by skirting the fine line between practical and theoretical ethics, highlighting the facets of ethics that gently lead the reader into a genuine understanding of the role of professionals in society. I found the forward-thinking, reverse approach to his main design as one of the book’s strengths.

Society and its leaders expect members in their service to provide for needs throughout the complex stages of life: provision that takes a keen sense of responsibility, self-awareness, and emotional intelligence. This book strategically weighs the role of leaders and collective responsibility against the need for development of the individual responsibility to provide beneficial service to society. The goals of

this book closely mirror the goals of the Hastings Center's teachings—ethics and moral instruction as intuitive to all subjects being taught. (The Hastings Center is a research institute of interdisciplinary teams which explore foundational and emerging questions in medicine and biotechnology, of which ethical issues are many). By tapping into the natural elements of moral development layered in every area of study, one will not sacrifice any aspect of the academic endeavor, yet yield students, future professionals, developed to heightened moral capacities. Using development of common morality schemas in young children as a good preventive measure to catastrophic ethical wrongdoings, Pritchard devotes a chapter to moral development and character education through the lens of Kohlberg's developmental psychology. The reader is tickled with possible strategies for promoting integration of moral issues into the continuing education of our society, while framed in the context of the limitations associated with Kohlberg's work.

Pritchard supplements the reader's learning with an ample supply of concerns such as basic duties of being ethical, codes of ethics, and working together: all the while, the entourage of perspectives lends both sociological and psychological advice. Pritchard and his colleagues give poignant insights into the architecture of practical ethics. Other topics covered include the role of judgment, integrity and trust in professional cultures, strategies for empowering ethical stewards, and the relationship between compromise and deciding with others. Thinking ethically is presented as an instinct capable of being honed to the level of automatic proaction. Professionals are encouraged to reexamine their responsibility to humanity.

The bar is set high. This reading requires a serious commitment to reflection and betterment of "profession." Pritchard asks that we prepare for professionalism and individual responsibility with a futuristic attitude (being open and responsible for what may happen) but have the mental ambidexterity to check historical perspectives and one's moral meter. He asks that we use all moral mirrors when making professional lane changes. Writings such as Prichard's are a must-have for officer/leadership education—his writing provides a perfect outfitting for leaders to use for ethics dress rehearsals. Additionally, this book is a profitable read for anyone interested in the motivational, cultural, and moral aspects of professional ethics. Pritchard made me think of my relationship with ethics and the value I place on the human elements of responsibility, collaboration, and truthfulness (individual and total). Do I have the "professionalism" that equates to a competitive edge chock full of ethical right-doings? I will now take the time to reflect on the right-doings and take more seriously William F. May's question: What do professionals do when no one is watching? As Pritchard notes, "Usually no one is"—but it should not end there.

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Weapons of Choice: The Development of Precision Guided Munitions by Paul G. Gillespie. University of Alabama Press, 2006, 232 pp., \$35.00.

"The weapons of Buck Rogers and Flash Gordon are no longer comic book fantasies. Laser guided and electro-optical (EO) weapons are for real!" So wrote an enthusiastic Air Force officer in the summer of 1971 about the advent of laser and EO precision-guided weapons. Over the course of the next 37 years, precision-guided weapons—laser guided, EO, or inertially aided—would become a mainstay of Air Force combat operations. Unfortunately, the development and evolution of these weapons has received little academic attention with the notable exception of books by David Mets, Michael Rip, and James Hasik. Hence, Paul G. Gillespie's *Weapons of Choice* is an important book that synthesizes primary and secondary source information to provide an excellent historical discussion of the development and importance of precision-guided munitions from World War I to the present day.

Gillespie's central thesis is that social factors influenced the development of precision-guided munitions (PGM) prior to Vietnam; however, once proven successful in the Linebacker operations, PGMs played a distinctly deterministic role in influencing national strategy. The conclusions and recommendations argue that current PGM technology should not determine national security policy. The author makes clear that the subject is narrowly focused on "conventional bombs that are interactively guided to terminal impact" (p. 6) with an analytical point of departure of the development of Azon and Aphrodite in World War II (WWII).

The author only briefly covers pre-WWII efforts at precision, yet conveys enough information to provide a foundation for subsequent discussion. His post-WWII discussion will appeal to technological scholars familiar with the writings of Stephen Rosen, who postulated that innovation in wartime is driven by changes in the measure of strategic effectiveness and the short time frame available for innovation. Gillespie's analysis reinforces these conclusions by showing a need for precision weapons dictated by a change from attacking fielded forces and cities to interdiction against bridges. Gillespie also accurately shows the evolutionary relationship between WWII Azon munitions and Korean Razon and Tarzon munitions based on a shortened time frame for innovation and the lack of technological improvement since WWII.

The author accurately portrays the Eisenhower doctrine of "massive retaliation" after the Korean War as a reverse salient that retarded the development of conventionally guided precision munitions. As a result, the Air Force entered the Vietnam years without the technology, infrastructure, or need for guided weapons. Following a social constructivist line of thought, Gillespie shows how this environment allowed the confluence of engineers, national security policy, and a mid-level military officer (Col Joe Davis) to push the development and procurement of laser-guided bombs (LGB) onto an Air Force organization rediscovering the importance of PGMs. Gillespie's discussion of the engineering process that led to Paveway LGBs is the best single source this reviewer has seen in either academic

literature or official Air Force publications. Of note, not only does the author trace the development of the winning LGB technology, but also the development and subsequent rejection of competing designs.

The only minor flaw is the sparse discussion of tactical-level input into the development of LGBs. Because the author asserts that social conditions drove the development and success of PGMs from WWII until Vietnam, it is surprising that so little attention is given to tactical-level operators during Vietnam. Gillespie presents a detailed discussion that tactical-level resistance to the complexity of Razon and Tarzon contributed to their demise in Korea but does not carry this same level of detail into the Vietnam era to explain the success of laser-guided PGMs. Multiaircraft integration (buddy-lasing), laser illumination, and target identification from increased release ranges were just a few of the issues that could have curtailed laser-guided weapons and required tactical-level innovation to overcome. The author provides many examples of tactical aircrew who appreciated laser weapons but relatively little information as to why. Referencing the tactical journal *USAF Weapons Review* would highlight the tremendous amount of tactical input required to ensure that laser-guided munitions would not follow the same fate as Razon and Tarzon. Not only would this addition round out an already compelling discussion of Vietnam, but it would also provide one more societal factor that played such an important role in development of PGMs. In spite of this omission, Gillespie develops a convincing and well-documented argument that social factors, ranging from national security policy to engineers to organizational influences, affected the development of PGMs.

Although the author provides a detailed and comprehensive study of guided munitions prior to and during Vietnam, only 46 of the 178 pages are devoted to explaining how, in the aftermath of Linebacker I and II, precision munitions came to be viewed as deterministically influencing national strategy. Gillespie writes that “arguably during this period [between Vietnam and the Gulf War of 1991] precision guided munitions displaced nuclear bombs and missiles of the cold war as the ‘ultimate weapon’ in the US arsenal, a shift that would lead to a dramatically altered national security policy” (p. 125). This alteration has led to “military force, in the form of precision aerial bombardment . . . used to achieve national objectives that before would have been pursued using exclusively nonmilitary instruments of national power” (p. 149). If a fault can be ascribed to Gillespie, it is the difficulty in proving a deterministic relationship.

While the impact of precision-guided munitions on employment of military force in general and airpower in particular is undeniable, proving that PGMs resulted in an aerial version of *guerre de course* is a daunting task. Gillespie correctly points out that precision weapons decrease the chance of collateral damage and unintended casualties, citing specific combat operations in the former Yugoslavia and Iraq. The major point of contention with citing these combat operations is that Gillespie does not take into account the economic sanctions and diplomatic efforts that preceded military operations. In short, he develops a causal relationship between PGMs and expectations of wartime

casualty aversion, but the assertion that a deterministic relationship between these weapons and an increasing use of airpower at the expense of other forms of national power is not proven in the opinion of this reviewer.

To summarize, the minor issues raised should not detract from the foundational quality of Paul Gillespie's *Weapons of Choice*. Future scholars will undoubtedly use Gillespie's impressive bibliography and methodology to build upon his work as munitions such as GBU-39, EGBU-15, and other guided weapons enter the Air Force inventory. From an operational perspective, it is astonishing to see the similarities between the evolution of guided weapons from World War II to Korea and the development of current munitions from Vietnam-era laser and electro-optical weapons. This book is recommended for Air Force professionals and historians intent on understanding the genesis and development of a truly important class of weapons. Technological scholars will also find value in *Weapons of Choice* because of the author's use of a social constructivist methodology and analysis of the linkage between social factors and the development of military technology in both peace and wartime.

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The Korean War by Allan R. Millett. Potomac Books, 2007, 144 pp., \$14.95.

Allan Millett's latest work on American military history, *The Korean War*, is a contribution to the Essential Bibliography Series, edited by Naval War College professor Michael Pavkovic. The series seeks to produce bibliographical reference books by noted scholars on important themes in military history. Millett, a former Marine officer, holds an emeritus professor position with Ohio State University and currently directs the Eisenhower Center for American Studies at the University of New Orleans. His previous works include *For the Common Defense*, a synthetic work of America's military history co-written with Peter Maslowski, which stands as a seminal work in the field and made several of the armed forces' reading lists. Most recently, he produced *A House Burning: The War for Korea*, the first in a two-part series on the Korean conflict. His interest in what many have termed the "forgotten war" points to why he was chosen to produce this annotated bibliographical work on the conflict.

This book follows the standard organizational construct set out by the editor for each work in the series. *The Korean War* begins with an essay outlining the major events and themes of the conflict. Following the essay are several topical chapters centered on discussing different historical works related to the central theme. Millett's essay fills more than one-third of the entire work and highlights some of the recent revelations made during his research into translated Korean archives. Although North Korean archives still remain closed to Western historians, Millett traveled several times to the Asian peninsula and discussed the war with those who experienced it firsthand. Despite the end of the Cold War, he believes the Korean War provides "a way to understand the possibilities and problems of nation-

building as well as the perils of postcolonial politics” (p. 3). Millett’s essay reflects some of the latest scholarship in the field, including the role of the Soviet Union in the conflict and the decision by China to enter the war. The entire book is a bibliographic reference, so readers will need to search for the essay’s references in the text, since he wrote the piece void of footnotes. His final conclusion provides insight into the devastation of the conflict for the Koreans and the role the Korean War played in the Cold War. As Millett surmises, “The belligerents gained something from the Korean War, but the Korean people had lost the most” (p. 95).

Millett divides the remainder of the book into five bibliographical chapters that address different subjects in topical as well as chronological order. The first chapter deals with the communist alliance. Millett ordered the chapters so that those dealing with the Asian belligerents are at the fore, since “their story is the least known” (p. 1). Drawing on references in English, Korean, Russian, and Chinese, he describes how recent scholarship has shattered some of the stereotypes held regarding the combatants, including the notion that Chinese soldiers were “drug-crazed peasants” or that North Koreans were “murderous sociopaths” (p. 97). Additionally, recently released Russian archives regarding 262 American POWs revised the myth that Americans held a 10:1 advantage over communist forces in the air. The actual number derived from the new archival sources, Millett contends, is actually 2.5:1.

In the third chapter, Millett delves into the Korean War from the Korean viewpoint. In the last couple of decades, historical scholarship revealed the devastation and sacrifice “all” Koreans (North and South) experienced throughout the war. Furthermore, new research has uncovered the role of American policy in the genesis of the conflict. According to Millett, some works have argued that American policy may have precipitated the conflict. This argument provides for a transition to his third section, which examines the Korean War from an international perspective and places the conflict in the broader context of the Cold War. As Millett describes, the international perspective sheds light on several of the senior officers of allied contingencies. In addition to works on US commanders, Millett highlights recent historical pieces on United Nations commanders. Furthermore, he describes where archival collections of personal papers can be found for those interested in conducting further research.

Millett closes his bibliographical discussion in a chapter devoted strictly to the military aspects of the Korean War. He outlines works that discuss everything from the larger campaigns to individual unit histories. While some of these works may not be in total compliance with the concept of the “new military history,” they do provide the reader a greater understanding of this oft forgotten war. Millett also highlights some interesting published accounts that can aid researchers and those interested merely in the Korean War. The author’s discussion, however, is not limited to soldiers only. He outlines works from veterans of every domain in the conflict: land, sea, and air.

Anyone seeking to do research into the Korean War or interested in the state of the current scholarship on the conflict will find Millett’s work loaded with a

wealth of information. In addition to the bibliographical references, *The Korean War* lists numerous Web sites and sources of information on the Internet. This work would be an incredible addition to any personal or professional library.

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Deforesting the Earth: From Prehistory to Global Crisis, An Abridgement by Michael Williams. University of Chicago Press, 2007, 478 pp., \$25.00.

Geographer Michael Williams, professor emeritus at Oxford, offers a history of world deforestation from the last ice age to the present in this slimmed-down version of his 520-page 2002 work (same title and publisher). He abridged the earlier work to bring this global history to a wider audience but still coherently discusses the phenomenon of deforestation—the “changing, thinning, and elimination of the forests” (p. xv)—over a wide period of time and space.

Williams attempts to cover the whole earth and therein divides the work into three parts of decreasing time span but increasing detail: from the end of the last ice age (i.e., 10,000 years ago) to 1500, 1500 to 1900, and from 1900 to the present. In all three parts, but certainly in the final and longest section, he concentrates on Europe and North America due to the lack of evidence in other regions. He also observes how European imperial expansion has greatly affected the rest of the world, directly through colonial-induced deforestation but also indirectly through market-induced cutting created by the economies of the former colonial powers. Thus, he gives an overview of the environmental impact of the expansion of Western hegemony throughout the world.

Williams argues that this study is warranted since “perhaps more of the earth’s surface has been affected by this process [deforestation] than any other single human activity” (p. xv). Throughout the volume he notes how cutting down trees had both positive and negative outcomes—opening up land for cultivation and providing needed products while also, at times, destroying the land and impoverishing the environment. While the lack of historical evidence makes this work necessarily a patchwork of examples, the global scope of the study and long timeframe reveals many trends not easily captured in more limited geographic areas or shorter time periods.

For security strategists, Williams shows how environmental history can be more useful than just the fashionable “environmental security” discussion. Environmental history offers a chronologically deeper understanding of processes taking place on the earth’s surface, connecting to the larger political and cultural environments. In this regard, Williams provides two valuable perspectives.

In his first perspective, he shows how deforestation has contributed to increased national security within Europe through the growth of the modern European states. In discussing the European deforestation in the early Middle Ages, he concludes that “the end result was the development of the physical and mental equipment

of the dynamic early modern capitalist world" (p. 136). Within this equation lay power over nature, the development of labor-saving devices, and new productive skills, all of which had their basis in the changing landscape which created wealth. This change was based on the destruction of forests or the conversion of forests into agricultural land, products, and urban areas. While the historical growth of European capabilities is nothing new, Williams' tie to deforestation gives his audience a different perspective on the true origins of the phenomena.

Williams also provides a historical study of the strategic value of timber that serves as a historical analogy for the importance of petroleum in today's world. He details how from the Middle Ages to the early twentieth century, timber was a, if not *the*, strategic commodity. European societies, in general, relied heavily upon timber for many of their needs, the most important being fuel and construction materials. Thus, the specter of a "timber famine" would set off alarm bells in European capitals and encourage governments to plan for the future, but often with, at best, mixed results. Like petroleum today, timber was a necessity for all but also a luxury for many of the most important people. For example, the author notes that the British people both wanted it and could afford it: "It is salutary to think that prosaic English drawing rooms constructed in the late sixteenth century were paneled with oak that came from Silesia and Galicia" (p. 181).

Directly affecting security, European militaries used forests in myriad ways, with some of the most critical uses in the navies. Ship construction took the lion's share of the best timber, but the provision of fuel, lubricants, pitch, tar, and even the smelting of iron for armaments also called for large amounts of wood. This meant that many of the highly developed northern European countries began to have timber shortages, with direct military consequences, thus expanding the importation of this commodity. Williams discusses the strategic value of timber to the timber-poor and deforested British Isles, a naval power. As an example, he looks at the Baltic timber trade in the eighteenth century, a mainstay of the British economy. Despite being a bulky commodity with a low per-unit value (similar to petroleum today) it was still the object of intense trade: "Timber was so indispensable a commodity that it was worth moving a great distance" (p. 181). Later, Britain's search for naval timber led it to the best source of teak, the Malabar Coast of India, and into wars with the Portuguese, Dutch, and local rulers to ensure a supply, eventually establishing the Indian colony, the crown jewel of the empire (p. 279).

Deforesting the Earth provides, as the author promises, "an account of how humans have related to their forests over at least seven millennia" (p. 472). Williams goes beyond the popular refrain "deforestation is bad" to investigate the phenomenon in all of its significance. His environmental history provides food for thought equally for those interested in deforestation and for those interested in investigating deforestation as a security issue with all of its nuances. While history will not predict the future, we can observe how countries reacted to timber shortages and perhaps see how we could or should react to similar problems in the present. The author leaves the reader with one interesting piece of data. In

world trade, timber is still the third most valuable primary commodity behind petroleum and natural gas (p. 467)!

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Freedom's Unsteady March: America's Role in Building Arab Democracy by Tamara Cofman Wittes. Brookings Institution, 2008, 177 pp., \$26.95.

Brookings Institution senior fellow Tamara Cofman Wittes contends in *Freedom's Unsteady March* that it is imperative the United States promote democracy in the Arab world. Even more important than helping stem the tide of Islamist terror, advancing democracy is crucial to enduring American interests in this often troubled portion of the world. Wittes writes, "Only the development of liberal democracies in the Arab world's major states will, in the long term, secure the advancement of American goals in the region."

Notably, the author's scope is beyond immediate efforts at promoting democracy in Iraq and Afghanistan (not an Arab country), which has obviously been addressed in countless works in the past several years. Instead, she covers challenges and failings associated with democratization across the Arab world, including Egypt, Algeria, the Palestinian Territories, and Lebanon. *Freedom's Unsteady March*, for a short work, is impressive in scope. It is necessary reading for any military officer or civilian official working Middle East issues, especially military-to-military or security relations. The book is particularly relevant considering the Bush administration's summer 2008 release of *National Security Presidential Directive (NSPD) 58: Advancing the Freedom Agenda*.

Ms. Wittes highlights the most daunting challenges to the United States with regard to democracy promotion: a current lack of legitimacy concerning American foreign policy in the Middle East due to developments in Iraq; the US propensity to pursue short-term goals, such as basing and access; and turning a blind eye to less-than-democratic Arab regimes that share America's interest in targeting Islamic extremists. She highlights the conundrum of opening Arab elections to all groups then failing to recognize and establish relations with less-than-moderate groups that emerge victorious, such as Hamas in the 2006 Palestinian parliamentary election. In recent years, the United States has pushed democratization in the most difficult places—or “weak states,” as she terms them—like Iraq, which are “incapable of effectively implementing democratic reforms in the face of severe internal challenges.” Instead, she charges, the United States should push political liberalization in countries with which it has the closest ties—Egypt and Saudi Arabia.

The most valuable aspect of the book is its review of the moribund and generally unsuccessful attempts by the Bush administration to advance democracy through both unilateral and multilateral efforts. Chapter 5 covers the Middle East Free Trade Area (MEFTA) Initiative, the Middle East Partnership Initiative (MEPI), and the Broader Middle East and North Africa (BMENA) Initiative. Unfortunately, these democratization programs fell prey to two factors: a general failure

to funnel funds into civic grassroots programs versus bilateral aid (where the money went and which proved less controversial with Arab partners), and a consistent lack of focus on political liberalization due to events in Iraq. In short, the early enthusiasm and rhetoric of the administration did not match the amount of time and effort actually spent on promoting democratization. State Department officials in embassies abroad did not have the time or resources to press countries like Egypt on democratization when they were scrambling to secure regional support for Operations Enduring Freedom and Iraqi Freedom.

Of interest to a defense audience is the author's suggestion to increase military exchange programs as a means to facilitate the spread of democratic values in the Arab world. Given that most Arab officials and rulers have either come from or have very close ties to the military, education and liaison programs such as those found at the Near East South Asia Center for Strategic Studies at the National Defense University are crucial in promoting civil-military relations. While giving brief mention, Wittes does not fully explore or flesh out the role that State Department-sponsored public diplomacy could play in expanding the democratic and political liberalization dialogue in Arab states. In the cyber and "new media" age, public diplomacy through the Internet might prove an effective way of introducing and spreading democratic ideals from the ground up.

Overall, Wittes provides an excellent, albeit frustrating (the subject, not her book) review of US democracy promotion in the Arab world while introducing some solutions to help reinvigorate the process. One such interesting suggestion, which she terms the Democracy Challenge Account (DCA), would tie government-to-government assistance to meeting democratization criteria and enabling local civic groups. Shortcomings in the author's analysis include no specific definition of democracy or delineation of what an Arab democracy should look like. Also, she gives little credit to incremental Arab government-reform efforts in recent years, such as the restoration of parliament in Bahrain this decade. *Freedom's Unsteady March* provides a helpful background to policy makers and policy implementers alike as the Obama administration works to form perhaps more modest and realistic democratization goals for the Middle East—in both rhetoric and practice—in the coming months and years.

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After Bush: The Case for Continuity in American Foreign Policy by Timothy J. Lynch and Robert S. Singh. Cambridge University Press, 2008, 396 pp., \$28.00.

This book swims upstream against the many vocal critics of Pres. George W. Bush's efforts in the war against terrorism. In many of the public debates, articles, books, and other media evaluations of this president's foreign policy, that policy is hotly debated and usually discounted. *After Bush: The Case for Continuity in American Foreign Policy* adds another opinion to the debate. It is worthy of one's

time to read as a new president develops his foreign policy. The two authors offer a distinct perspective on the impact of the Bush foreign policy and postulate that the policy decisions of the next American president will remain essentially the same as those espoused in the Bush doctrine. The authors label this period of time “the Second Cold War” and state that it has many of the similarities of “the First Cold War, which offers a roadmap for the Second—one which no American administration after Bush will reject” (p. 15).

It is especially interesting to note that the authors are British university professors. Timothy Lynch is a lecturer in American foreign policy at the Institute for the Study of the Americas, University of London. Robert Singh is a professor of politics at Birkbeck College, University of London. As teaching professionals, they seem academically anchored, having already written several books during the last decade on topics across the spectrum of American politics and foreign policy.

The thesis of *After Bush* is that the foreign policy embarked upon during the Bush administration shall endure after the end of the administration in January 2009. I was pleased that the authors offer a well-researched and documented argument to substantiate their claim that the current direction in foreign policy shall prevail during the next administration. Their analysis of the Bush foreign policy concerning the need for and result of that policy is generally positive. Lynch and Singh imply that current American policy is effective in dealing with the terrorist threat and that it is necessary for the United States to continue this primary role of fighting terrorism. What is not developed within the book is a full discussion of the political cost of President Bush's declining domestic acceptance rating as a result of maintaining that foreign policy. Lynch and Singh do not assert that the next president shall attempt to improve his presidential standings by changing policy; they simply state that the current direction of American diplomacy and military intervention is the appropriate avenue in these times and that the new president, facing similar threats shall continue to take the Bush perspective on these matters.

Lynch and Sing make a compelling case for this assertion. One of the reasons postulated is the similarity of the Democrat and Republican positions concerning the use of military force. The authors argue that American political parties are closer in their beliefs on the use of the American military in foreign policy than those of our nation's closest allies. This is an interesting perspective, to say the least, and yet the authors skillfully introduce carefully crafted research and documentation to make this assertion seem feasible.

Overall, these scholars offer a well-written book that clearly states the reasons why their thesis may hold true in the near future. Consequently, this book is useful for Americans wanting to digest the current state of affairs of foreign policy development with an eye towards what may be in store for the country. Yes, I would fully recommend this book for our Air Force audience. It is well researched, documented, and skillfully written and contains endnotes, a bibliography, and an index to assist in answering the concerns of any reader in search of the sources of the nuances and statements within the book.

If the thesis of these writers proves true, then perhaps in future years when a new historical evaluation of President Bush's contribution to our security is made, a greater appreciation of his foreign policy may be forthcoming than he now enjoys and, then again, perhaps not. The potential resolution of that paradox is part of the worth that each reader may find from reading this book.

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WTO Negotiations on Agriculture and Developing Countries by Anwarul Hoda and Ashok Gulati. Johns Hopkins University Press, 2007, 320 pp., \$27.95.

Renowned agricultural trade experts Anwarul Hoda and Ashok Gulati wrote an insightful book detailing the evolving agricultural negotiations of the World Trade Organization (WTO) and the impact/implication of establishing multi-lateral agreements that further liberalize agricultural trade. The authors propose that the "reduction in subsidies and market access barriers to reasonable levels in the industrialized countries can increase world incomes and expand world trade far more than can similar progress on any of the other items relating to trade in goods" (p. 5). They assert that such an outcome would greatly enhance the economic growth of developing countries possessing agricultural endowments. To advocate persuasively such a position requires an exceedingly high level of understanding by developing countries involved in agricultural trade negotiations. Until now, there has been no scholarly analysis of the rules, manner, or vision on which governments of developing countries could rely upon to gain this understanding. This book fills this gap and smartly articulates a strategy that would be in the best interest of developing countries to adopt in the Doha Round negotiations.

Hoda and Gulatis delve deeply into the evolution of the rules and disciplines on agricultural trade policies of the WTO and its predecessor, the General Agreement on Tariffs and Trade. Within the WTO's ongoing Doha Round of trade talks, and supported by a well-articulated historical background, the authors address the many challenges plaguing meaningful progress in promoting the free flow of agricultural goods between countries, particularly between developing and industrialized countries. They also point out the adverse economic consequences to developing countries. Negotiations on agriculture have from the outset been the main driving force in the Doha Round, which has sought to have major industrialized countries eliminate export subsidies and substantially reduce domestic support and market access restrictions.

This work offers a detailed analysis and assesses the implementation experience of previous agreements by the two major industrialized economies—the United States and the European Community—and India and looks at how some of the other WTO members have fared in executing their obligations under trade agreements. The authors highlight the failings of previous rounds of agricultural trade negotiations that have culminated in the current impasse of the Doha Round.

They point to numerous examples of ignored agreements, creative work-around responses by signatory nations, and increased spending on domestic support through traditional and (the ever-increasing use of) nontraditional support means. During the Uruguay Round, the last WTO round of trade negotiations to conclude, nations agreed to specific, binding agriculture commitments in the areas of market access, domestic support, and export competition to be implemented over a period of six years. This held promise for efficient agricultural exporting countries. However, policies of domestic support prevailed, and protection of inefficient agriculture continued unabated in the principal industrialized countries—even intensifying in some cases. In the case of the United States, the Uruguay Round failed to bring any significant reduction in market access barriers and domestic subsidies in products traditionally supported by government subsidies. Much of this has led to domestic surpluses of food grains that lay hidden behind a façade of humanitarian food aid adversely affecting world food prices.

The authors elaborately detail practical, tough-minded recommendations regarding tariffs, market access, and treatment of sensitive or special products for developing countries to embrace in addressing the current agriculture road-block faced in this current round of WTO trade talks. Hoda and Gulati further emphasize the importance of developing countries not losing sight of the need to carry out domestic reforms to strengthen their agriculture by rationalizing incentives; investing in research, technology, and rural infrastructure; and carrying out institutional reforms (p. 244). This book will be of particular interest to economic development planners associated with geographic combatant commands, the US Agency for International Development, the United Nations Conference on Trade and Development, the Organization for Economic Cooperation and Development, researchers, practitioners, and academics/students seeking in-depth knowledge of the recent history of agricultural trade talks.

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What Does China Think? by Mark Leonard. Public Affairs/Perseus, 2008, 176 pp., \$22.95.

Since almost the beginning of recorded history, China has been one of the major contributors of ideas to the rest of the world. Written over 2,000 years ago, Sun Tzu's *Art of War* is still required reading in professional military schools. Scholars such as Mencius, Chu Hsi, and Wang Yang-Minh made China the center of intellectual thought through Confucianism, Neo-Confucianism, Daoism, and Mahayana Buddhism. Even as late as the twentieth century, Maoism, as the peasant variant of Marxism and Leninism, regenerated communist thought throughout the nonindustrialized world.

The post-Maoist period, however, has not been characterized as a time of Chinese thought but of wholesale adoption of Western ideas. Specifically, Deng Xiaoping's efforts to modernize the Chinese economy along the model of American capitalism

have fueled spectacular growth rates over the past few years. One assumed that the Americanization of China in the 1980s and 1990s would lead to a natural emergence of liberal democracy. Such has not been the case, however, as evidenced by Tiananmen Square. Not only has the Chinese Communist Party confounded this global notion by successfully maintaining a market economy within a political dictatorship, but Mark Leonard in *What Does China Think?* asserts that Chinese intellectuals may offer an alternate “Walled World” global development model. This Chinese model competes for world influence with both the “flat world” model described by *New York Times* columnist Thomas Friedman, in which nation-states lose control of their fates in the relentless progression of American values, and the liberal multilateralism model preferred by Europe.

Following his successful book *Why Europe Will Run the 21st Century*, Leonard’s latest work is a result of his tenure as visiting scholar at Beijing’s Chinese Academy for Social Sciences. His previous experience was as executive director of foreign policy at the Centre for European Reform and director of the Foreign Policy Center. Though not a sinologist, his relationship with Chinese intellectuals provides an insight on the internal debate among China’s most prominent scholars on the country’s economic and political future.

Leonard’s analysis is almost dialectical between existing and emerging thought within China. “New Right” economic liberals embrace “Pearl River Capitalism” and press their case for increased entrepreneurial freedom against the “New Left,” who advocate “Yellow River Capitalism” with more state control for worker’s rights and environmentalism. Similarly in world politics, “liberal internationalists” who advocate promoting Chinese interests through the existing world order compete against the nationalistic “neo-comms” who believe a more assertive foreign policy should contain American, Japanese, and, especially, Taiwanese influence. These debates occur within a system in which the Chinese Communist Party refuses to relinquish political power but recognizes that the government needs to be more responsive to its citizens in terms of corruption and abuse by government and business officials. Hence, deliberative dictatorship allows some modicum of democracy by permitting Chinese citizens to participate more in the process administered by the current regime. Representative democracy, they argue, will eventually occur but as a slow, methodical process. Militarily, the Chinese recognize they cannot and will not compete with the United States in terms of arms but will use all economic, political, and military weapons to keep the United States off balance through China’s version of asymmetric warfare. Realizing they are quickly becoming a dominant world actor, the Chinese even strive to quantify their economic, political, and military assets in an all-inclusive package, or Comprehensive National Power, to better compete with other world powers. Emerging from this convolution of thought is a Walled World international system that allows nation-states the sovereignty to participate in controlling the economy, managing their own political systems, and shaping their foreign policies.

The Chinese system of managed state capitalism can be appealing to autocratic leaders of developing nations, especially after seeing how uncontrolled economic

reforms contributed to the collapse of the Soviet Union. The Communist Chinese government not only provides a new developmental model but also offers the opportunity and means to apply that model through “soft power.” Autocratic leaders such as Robert Mugabe of Zimbabwe or the military junta in Myanmar gladly accept economic aid, investment capital, and loans from China without the accompanying encumbrances and restrictions that often come with Western economic packages. Chinese “Special Economic Zones” outside China’s borders cement the economic relationship with other countries. Consequently, China’s influence has grown throughout the world.

This concise and readable introductory primer on modern Chinese intellectual thought is well supported but does not bog down the reader in detailed economic or political minutiae. Indeed, Leonard employed an unconventional system of identifying quotations only at the end of the book so as “not to overburden the reader” with notes. His experience as a commentator in several international periodicals has developed his talent for explaining complex economic and political issues in understandable prose. Leonard’s writing style so engages the reader’s interest that one could easily finish this book within a night. Short biographies of today’s major intellectual thinkers in China also provide a handy reference source at the end of the book.

One might consider *What Does China Think?* as a wakeup call for global powers who, while recognizing China as a potential economic and military threat, may not have considered the impact its political and economic model might have on the rest of the world. The rise of China may indicate that the right to rule historically attributed to the Mandate of Heaven may have very well passed to these new Chinese leaders, with the new Middle Kingdom providing economic and military aid accompanied by an effective economic/political model for the modern tributary nations. The Western world may have to compete not only in the military and economic spheres but also in the realm of ideas. Leonard’s book would be a fine start to learning about these new ideas.

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Why Air Forces Fail: The Anatomy of Defeat, edited by Robin Higham and Stephen J. Harris. University Press of Kentucky, 2006, 382 pp., \$39.95.

As an Airman, I initially approached “*Why Air Forces Fail: The Anatomy of Defeat*” with some trepidation based solely on the title. Unaware of any historical conflicts in which any air force acted in total isolation from other forces—a necessary but impossible prerequisite to assign it sole responsibility for any success or defeat—I assumed that either the editors were being deliberately provocative with their title or that I was about to embark on a dangerous attempt to isolate airpower’s contributions from the totality of conflict.

After reading the book, it seems that the former conclusion was the correct one. *Why Air Forces Fail* is indeed an appropriate title with its deliberate choice of “air

- Stove piping, incompatibility of systems, and doctrinal disconnects due to interservice rivalry tend to lead to piecemeal defeats of all of the forces involved, not just the air force.
- Technological and industrial superiority, once ceded to an adversary (which almost always happens after an underestimation of the potential adversary's capabilities), can seldom be regained unless sufficient strategic depth in geography, industry, resources, and manpower exists to create the time needed to forestall defeat and either rebuild those capabilities or adapt new ones.
- Just as airpower is extremely effective when directed toward the right ends, it is also extremely vulnerable to the negative repercussions of misidentifying the correct centers of gravity at the operational and strategic levels, in terms of attrition, loss of operational effectiveness, and loss of credibility.

Why Air Forces Fail may provide as many questions as answers to those seeking conclusive axioms. However, it certainly reinforces perhaps the most important point of all: airpower is just part of the overall equation—albeit an extremely important one. Its numerous advantages can easily be squandered if not understood or included in a comprehensive plan to balance its strengths and weaknesses as well as its requirements for support against those of the other forces involved.

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Undeclared War and the Future of U.S. Foreign Policy by Kenneth B. Moss.
Johns Hopkins University Press, 2008, 320 pp., \$22.95.

Kenneth Moss, a professor and chairman of the Department of National Security Studies at the Industrial College of the Armed Forces, National Defense University, tackles the vagaries of presidential and constitutional power associated with US declarations of war over the nation's history.

Moss points out that the US Constitution, as its framers intended, allows only for a *true* declaration of war to come from the Congress. The consolidation of presidential power has slowly usurped this authority, creating precedent such that in the most recent wars in Iraq and Afghanistan, the president informs the Congress of the need for increased, and regular, financial supplementals to finance ongoing operations. Moss finds this especially troubling because not only is the president no longer accountable to Congress, the Congress itself has become deferent and timid in face of this form of presidential power.

What the framers of the Constitution intended, in Moss's view, did not account for many of the so-called limited wars America's men and women have found themselves fighting in the modern age. The lack of accountability by the president to the Congress has had a deleterious effect on the relationship between the chief executive and the legislative branch, such that what was supposed to be a cooperative check-and-balance of powers is more of an adversarial game of one-upmanship.

Moss begins his detailed study with a foundational argument for the Constitution's accounting for limited wars, noting that it does not exactly differentiate between the conditions of war and peace. War in the historic sense consisted of set-piece battles, pitting armies and navies against each other without regard to gray space or limited objectives. Even the Clausewitzian notion of war as a political lever did not enter the strategic dialog until the early nineteenth century.

After interpreting the Constitution and Congress' role with respect to war declaration, Moss tackles the perceptible increases of presidential power through time. Complicating the calculus was the Cold War and the concurrent limited wars. It is at this point in the book—about halfway—that Moss undergirds the troubling prospects of increasing presidential power at Congress' expense with his own articulated strategy for enhancing and improving congressional oversight and giving teeth to the War Powers Resolution. The framework he provides, however, does not apply neatly to every kind of limited war, as Moss himself hints, but serves well as an intellectual point of departure.

Overall, Moss's book fills a niche relevant to today's interpretation of presidential powers. Scholars wishing to learn in depth about the history of declaring wars in the United States will be well served by this work. It is also a must-read for national security scholars wishing to glean more about constitutional, congressional, and presidential power.

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The Price of Peace: Just War in the Twenty-First Century, edited by Charles Reed and David Ryall. Cambridge University Press, 2007, 358 pp., \$29.99.

The Price of Peace is a collection of brilliantly written essays that cover the tumultuous topic of modern-day application of just war theory. The book is compiled and edited by noted British ethicists Charles Reed, international policy adviser to the Church of England's Mission and Public Affairs Unit and author of *Just War?*, and David Ryall, assistant general secretary to the Catholic Bishops' Conference of England and Wales and contributor to *International Relations*, *Third World Quarterly*, and *World Today*.

The editors define and support their thesis that the just war tradition continues to serve as a relevant tool for analyzing global order, peace, and security; however, changing conditions necessitate an effort to update the just war traditions to consider modern-day conflicts and situations accurately. By pooling the talents of many well-known just war ethicists, the book makes a strong case for reinterpreting aspects of just war tradition to better define use against nonstate actors in asymmetric operating conditions but falls short of justifying significant revisions.

Structured around four themes, the first theme introduces just war theory from the American and British state and civil society perspectives. George Weigel succinctly describes just war development, pointing out the modern-day implications with its use. James Turner Johnson provides an excellent description of how many

modern religions interpret just war thinking. Nigel Biggar's essay, "Between Development and Doubt: The Recent Career of Just War Doctrine in British Churches," is so convincing that the reader will ponder whether any change to the just war tradition is needed at all.

The second theme describes the modern challenges that require just war revision. Although the UN concluded in 2005 that military intervention may be necessary in situations where gross humanitarian rights violations occur, the criteria for these actions is wanting for interpretation. Included in this theme is the need to define sovereign actions against terrorist networks and those who enable terrorism through providing sanctuary or weapons with the potential to cause mass effects. The authors provide clear descriptions of these situations; however, the terrorism arguments tend to mirror obvious and common-knowledge solutions and generally fail to convince the reader to pursue significant changes to existing just war theory.

In the third theme, modern warfare strategies and techniques are applied to situations that necessitate just war theory consideration. Paul Cornish's conclusion that effects-based operations overwhelm leaders to the point of blending *jus ad bellum* and *jus in bellow*, thus violating just war principles, is shallow in analysis and unconvincing of the need for change. Also included in this theme is Terrence Kelly's superbly written essay, "The Just Conduct of War against Radical Islamic Terror and Insurgencies," which provides excellent comparisons of traditional and radical Islamic thinking and America's need to think beyond its traditional warfare mind-set. Although rushed in description and reasoning, his case for modern just war thinking is logical and thought provocative.

The final theme advocates just war theory changes for the conclusion of warfare to produce peace following conflict. The authors effectively describe the impacts of many peace-producing institutions but provide little evidence and few solutions to support changing just war or how peace might be achieved.

The editors saved the best writings for the conclusion, which skillfully ties together many of the arguments and perspectives used throughout the book. It concludes with the convincing argument that just war tradition remains a relevant tool for exercising statecraft; however, modern transitions to the institutions, such as the United Nations and the actions of nonstate actors, have shown cause for changes to interpretations and perspectives to continue the relevancy of the tradition. The conclusion identifies the fact that just war tradition is used as a basis, sometimes subconsciously, for decisions regarding use of force.

Readers will find *The Price of Peace* to be an interesting articulation of American and British perspectives of just war history with modern-day challenges interjected. Students of military strategy and ethics will appreciate the just war tradition review and modern-day conflict application and will quickly conclude that today's global challenges no longer fit neatly into the just war definitions. The essays most definitely achieve the editors' goal of generating questions and debate rather than merely providing answers.

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Mission Statement

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